F-53 MOTORHOME / F-59 COMM. CHASSIS
WHAT'S NEW

- Added Electrical Schematic Content
- Embedded Modem Has Been Deleted From All MY26 F-53 And F-59 Models. *See order guide for additional details
- Added AC System Schematics

Ford PRO Body Builders Layout Book

F-53 MOTORHOME / F-59 COMM. CHASSIS
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F-53 MOTORHOME / F-59 COMM. CHASSIS
INTRODUCTION

IMPORTANT NOTICES

The information described herein is believed to be correct at the time of publication, but accuracy cannot be guaranteed. Ford reserves the right to discontinue models or change specifications or designs at any time without notice and without incurring any obligation.

Representations regarding the compliance of any Ford- manufactured incomplete vehicle to any rule, regulation or standard issued pursuant to the National Traffic and Motor Vehicle Safety Act or the Canadian Motor Vehicle Safety Act are set forth only in the Incomplete Vehicle Manual (IVM) which accompanies each incomplete vehicle.

Regulations such as those issued by the Federal Highway Administration (FHA) or issued pursuant to the Occupational Safety and Health Act (OSHA), and/or state, provincial, and local laws and regulations may require installation of additional equipment for the particular use intended for the vehicle. It is the responsibility of the subsequent stage manufacturer or completed vehicle alterer and the vehicle purchaser to ascertain how the vehicle will ultimately be used, if FHA, OSHA or state provincial or local regulations apply and how the vehicle as completed will comply with those requirements. Nothing contained herein is to be construed as a representation that such equipment required for the particular use intended has been installed on the completed or incomplete vehicle.

REFERENCE INFORMATION

Ford Body Builder Advisory Service Publications

This document is an example of a program-specific Body Builders Layout Book (BBLB) published by the Ford Body Builder Advisory Service (BBAS) team. Each Ford Commercial Truck vehicle line has a similar document that aims to provide detailed information which may be of interest to a subsequent-stage manufacturer or alterer.
The Ford Transit and Transit Connect also have a Body and Equipment Mounting Manual (BEMM), which is a comprehensive resource dedicated to body and equipment mounting information.

Yet another source of program-specific information are the “Vehicle Specification” documents available on the Ford BBAS website. Information typically found in these documents are vehicle curb and accessory weights, vehicle dimensions, component descriptions, capacities, GAWRs, alternator output, powertrain output and gear ratios.

In addition to the program-specific documents, there are several Ford BBLB documents that contain general best practices or information on specific subjects that span multiple vehicle lines. These include:
- General BBLB - contains Definitions, Design Recommendations and Vehicle Storage Guidelines.
- Snowplow BBLB
- Pickup Box Removal BBLB

These publications are updated every model year and can be accessed via the web https://www.fordpro.com/en-us/upfit/ “Publications”. For BBLB and BEMM documents, expand the “Body Builder Layout Book” Section to view all available documents. For Vehicle Specifications, expand the “Vehicle Specifications” section. The website search function can be used to filter for specific content or vehicle line.

Ford Body Builder Advisory Service Bulletins

Occasionally, the Ford BBAS team will create an SVE “Bulletin” to address a specific issue or distribute important information in a timely manner. These documents can be accessed via the web at https://www.fordpro.com/en-us/upfit/publications/ under “Bulletins”. The website search function can be used to filter for specific content or vehicle line.

If applicable, information from each SVE bulletin will be incorporated into the appropriate BBLB document the following model year. In some cases, SVE bulletins will continue to be referenced in this document.

Ford Body Builder Advisory Service Contact

The Ford Truck Body Builder Advisory Service may be consulted if questions regarding the completion of Ford commercial vehicles are not adequately addressed in the documentation described above. For assistance call (877) 840-4338 or e-mail via the web at https://www.fordpro.com/en-us/upfit/contact-us/

For Ford vehicle CAD requests, please visit https://www.fordpro.com/en-us/upfit/cad/.

For both Questions and CAD Requests, please be as specific as possible with the request details to assure the most accurate and timely response.

Ford Service Publications

Ford Service Technical Resources (including wiring diagrams, repair manuals and diagnostic tool support) are available by subscription via the Motorcraft website: www.motorcraftservice.com

The following publications are examples of digital and printed manuals which are available from Helm Incorporated; call 1-800-782-4356 or contact Helm, Inc. at their website www.helminc.com:
- Ford Truck Shop Manuals
- Ford Towing Manuals
- Ford Wiring Diagrams

F-53 MOTORHOME / F-59 COMM. CHASSIS

MODEL LINEUP: F53 MOTORHOME

				MAXIMUM				GAWR lb.[2]		BASE STRIP CHASSIS CURB lb[3]		
DRIVE	WB in.	ENGINE	TRANSMISSION	GVWR lb.	PAYLOAD lb.[1]	GCWR lbs	TRAILER WEIGHT lbs	FRONT lbs	REAR lbs	FRONT lbs	REAR lbs	TOTAL lbs
4x2	178	7.3L	AUTOMATIC	18,000	11,630	23,000	5,000	7,000	12,000	3,122	3,240	6,362
	190	7.3L	AUTOMATIC	18,000	11,590	23,000	5,000	7,000	12,000	3,176	3,227	6,403
	208	7.3L	AUTOMATIC	18,000	11,530	23,000	5,000	7,000	12,000	3,223	3,241	6,464
		7.3L	AUTOMATIC	22,000	15,300	26,000	4,000	8,000	15,000	3,289	3,410	6,699
	228	7.3L	AUTOMATIC	22,000	15,210	26,000	4,000	8,000	15,000	3,348	3,437	6,785
		7.3L	AUTOMATIC	26,000	18,720	30,000	4,000	9,000	17,500	3,500	3,779	7,279
	242	7.3L	AUTOMATIC	22,000	15,140	26,000	4,000	8,000	15,000	3,390	3,462	6,852
		7.3L	AUTOMATIC	26,000	18,650	30,000	4,000	9,000	17,500	3,542	3,804	7,346
	252	7.3L	AUTOMATIC	24,000	16,610	30,000	6,000	9,000	15,500	3,555	3,826	7,381
		7.3L	AUTOMATIC	26,000	18,600	30,000	4,000	9,000	17,500	3,572	3,822	7,394

1. Load rating represents maximum allowable weight of people, cargo and body equipment and is reduced by optional equipment weight.
2. Gross Axle Weight Rating is determined by the rated capacity of the minimum component of the axle system (axle, springs, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVW rating or GAWR (front or rear).
3. Base Curb Weights shown above consider the strip chassis weight with standard equipment, full fuel tank and other fluids filled to capacity. Optional equipment weights are in pounds as follows (Front/Total): 19.5” x 6.75” Tires and Wheels (optional with 22,000-lb GVWR only) (- 39/-76);

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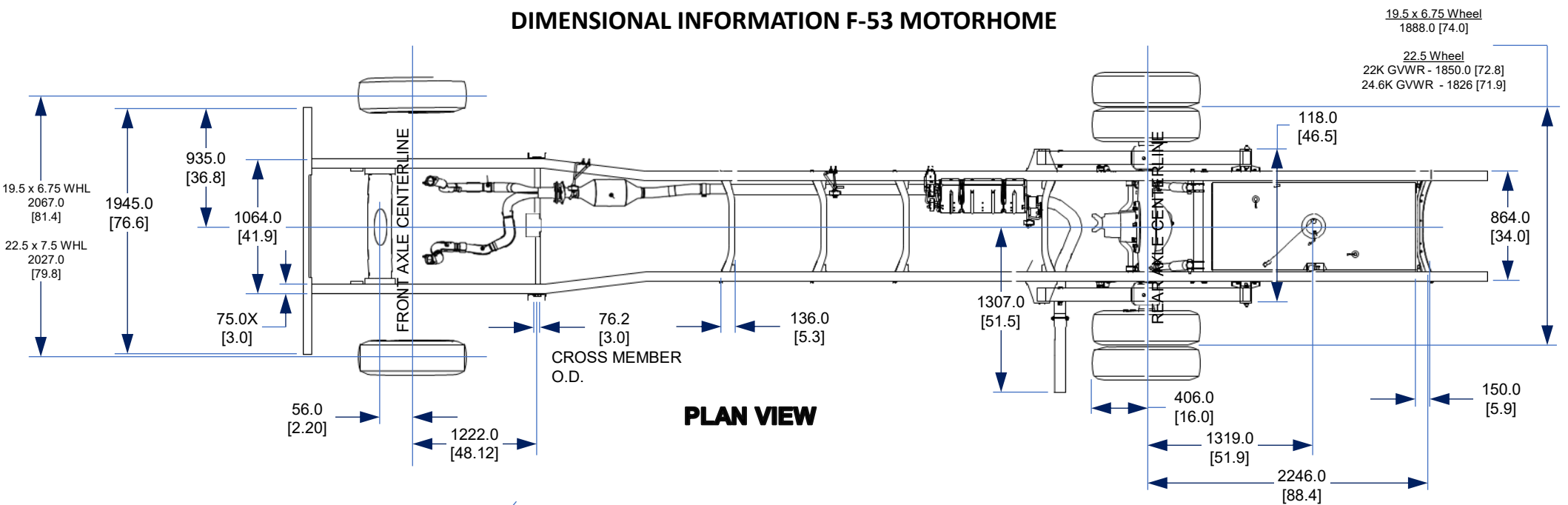
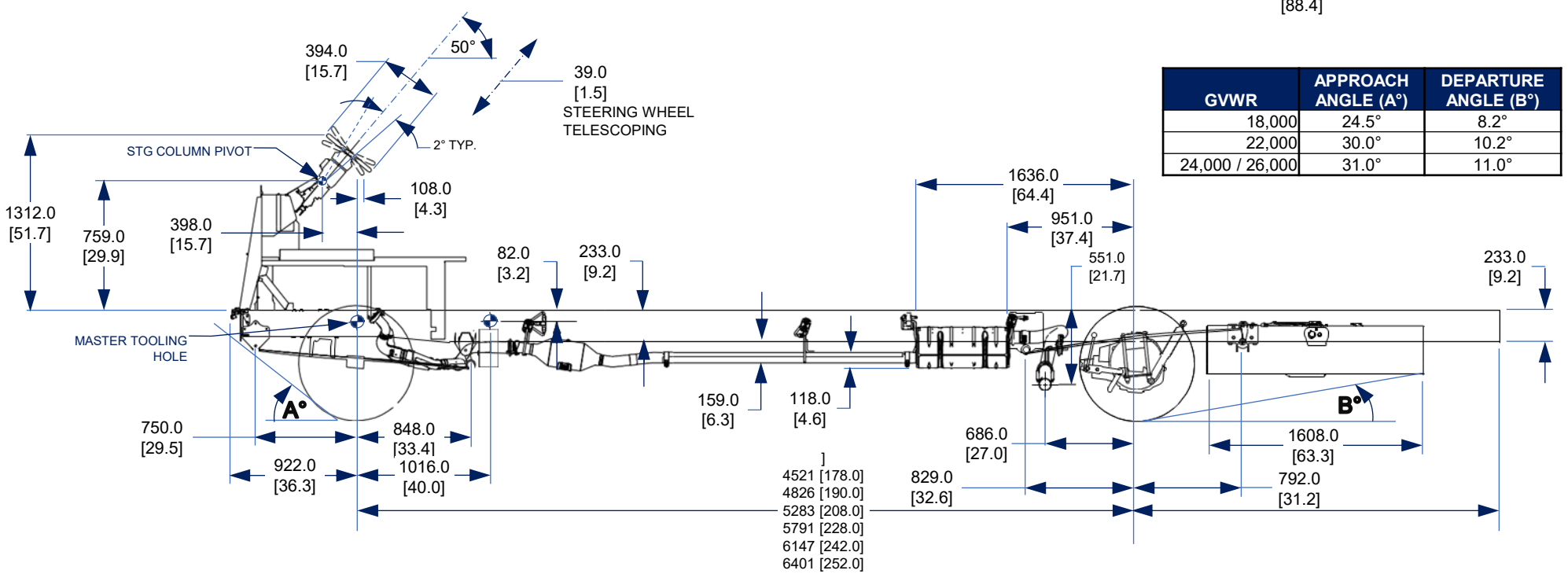
F-53 MOTORHOME / F-59 COMM. CHASSIS
DIMENSIONAL INFORMATION F-53 MOTORHOME



PLAN VIEW



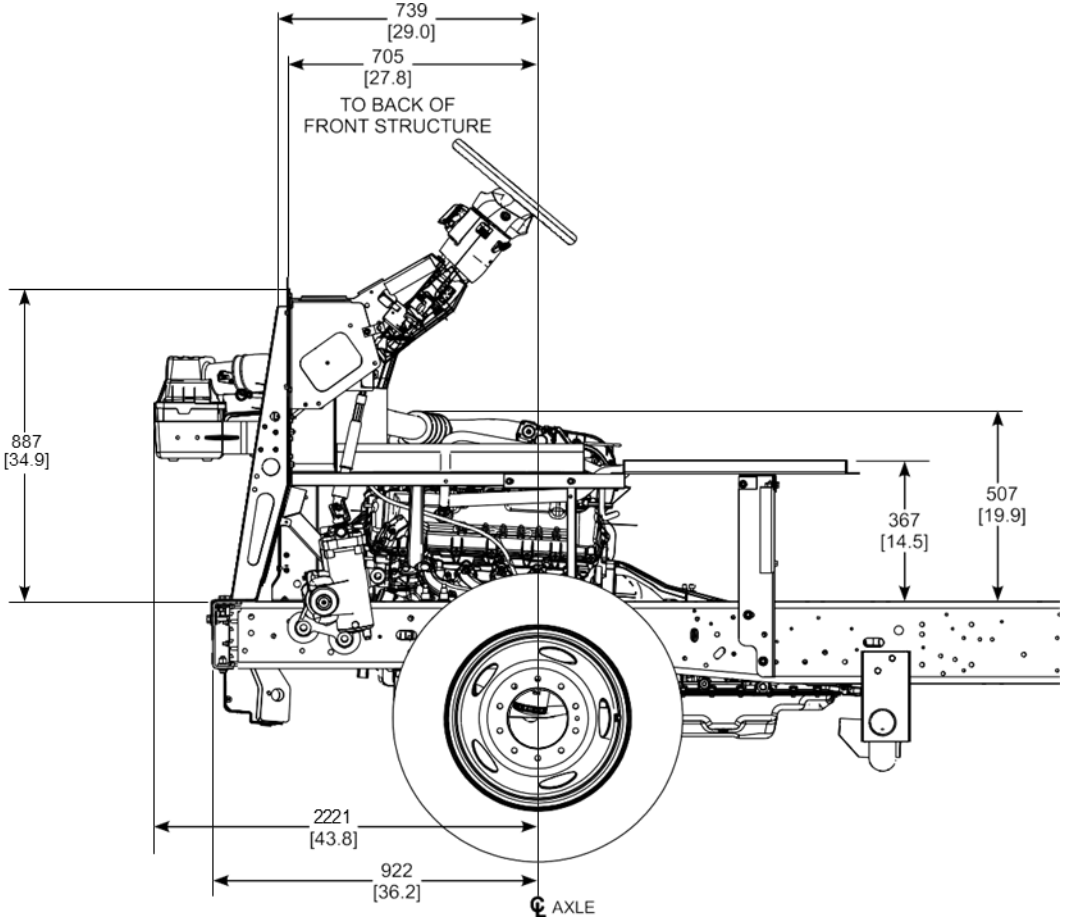
GVWR	APPROACH ANGLE (A°)	DEPARTURE ANGLE (B°)
18,000	24.5°	8.2°
22,000	30.0°	10.2°
24,000 / 26,000	31.0°	11.0°

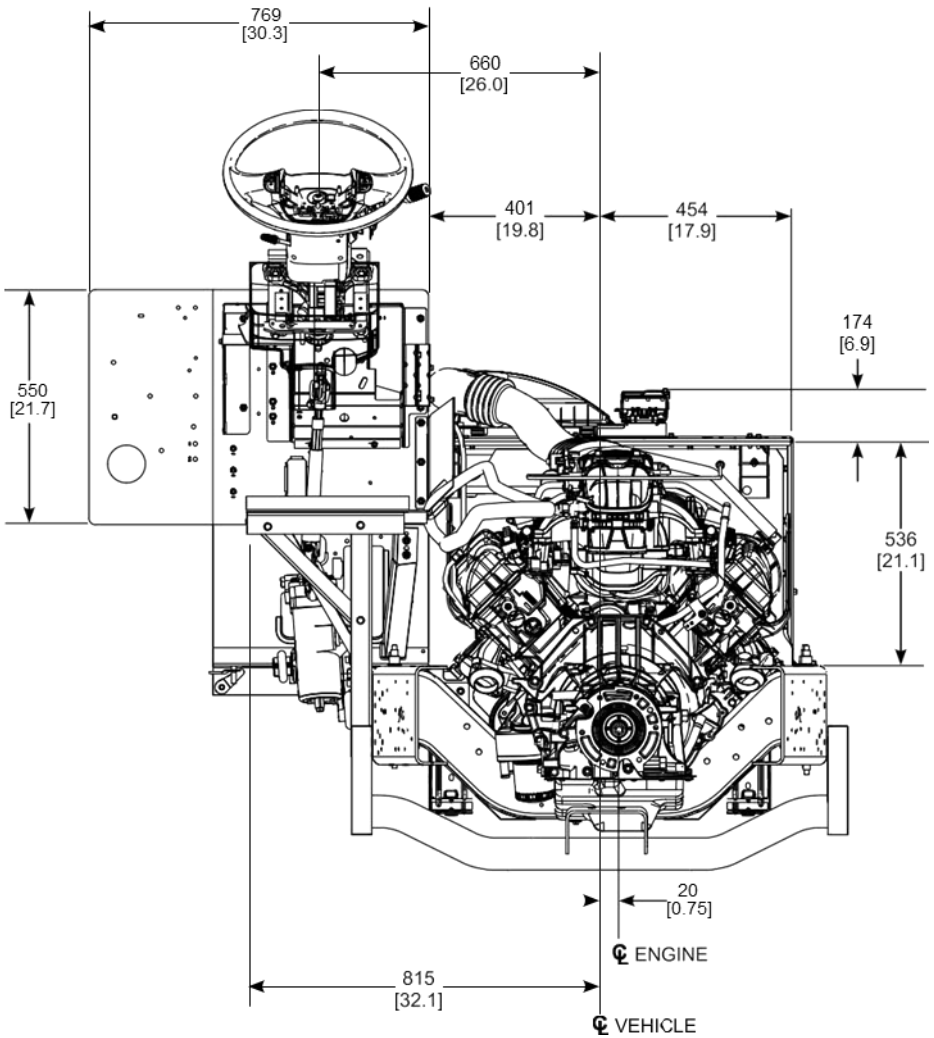
SIDE VIEW

NOTE- [ ] DIMENSION ARE INCHES

F-53 MOTORHOME / F-59 COMM. CHASSIS

F-53 MOTORHOME FRONT STRUCTURE

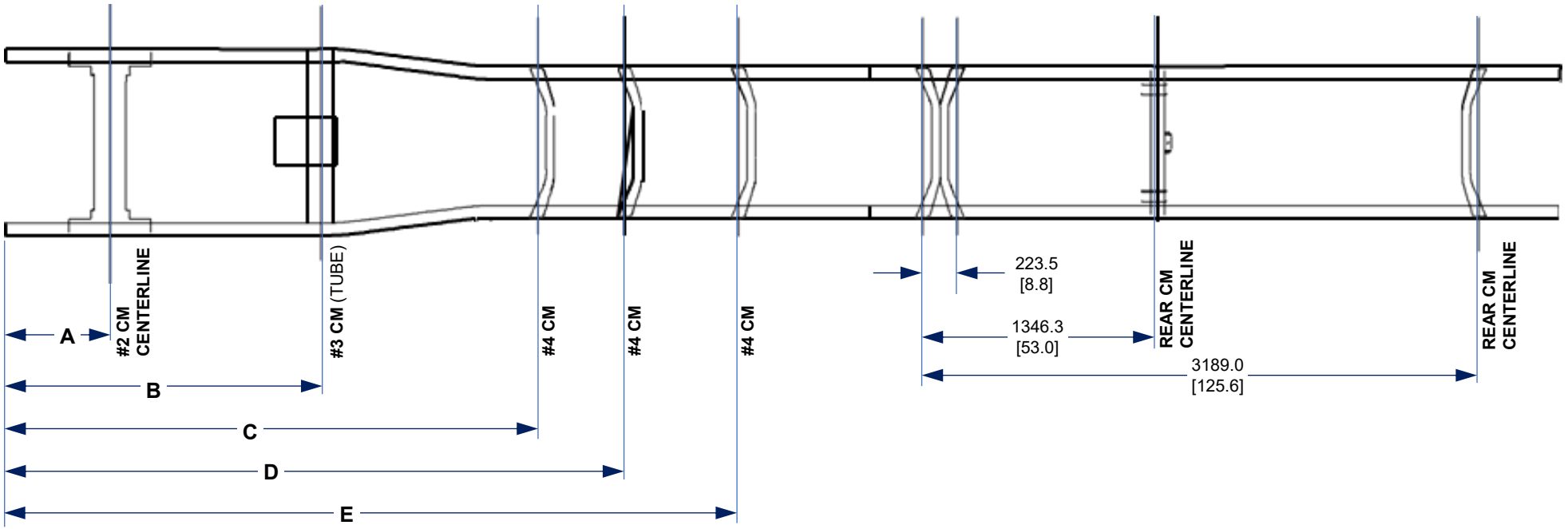




NOTE- [ ] DIMENSION ARE INCHES

Ford PRO™ Body Builders Layout Book

F-53 MOTORHOME / F-59 COMM. CHASSIS
FRAME: F-53 CROSSMEMBER LOCATIONS



Note: 2026MY is now a 1-piece frame rail

DIM.	178" WB		190" WB		208" WB		228" WB		242" WB		252" WB	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
A	796	31.3	796	31.3	796	31.3	796	31.3	796	31.3	796	31.3
B	2073	81.6	2073	81.6	2073	81.6	2073	81.6	2073	81.6	2073	81.6
C	NA	NA	NA	NA	3002	118.2	3282	129.2	3282	129.2	3405	134.1
D	NA	NA	NA	NA	NA	NA	4004	157.6	4004	157.6	4329	170.4
E	3385	133.3	3436	135.3	4147	163.3	4655	183.3	4655	183.3	4885	192.3

MEASUREMENTS TAKEN FROM FRONT EDGE OF LOWER FLANGE OF RAIL

NOTES:
- UNLESS OTHERWISE NOTED, DIMENSIONS ARE TO THE CENTERLINE OF CROSSMEMBER FASTENERS.
- MEASUREMENTS FROM FRONT EDGE OF LOWER FRAME. SUBTRACT 9 MM IF MEASURED FROM TOP FRONT EDGE OF FRAME WEB.

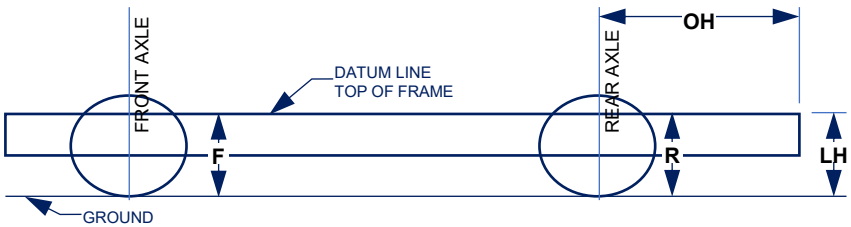
NOTE- [ ] DIMENSION ARE INCHES

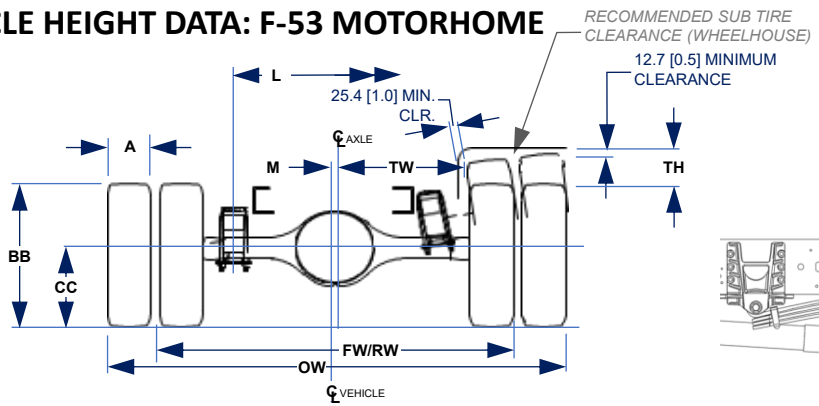
Ford PRO

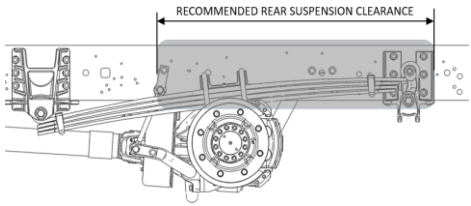
Body Builders Layout Book

F-53 MOTORHOME / F-59 COMM. CHASSIS

AXLE / TIRE / VEHICLE HEIGHT DATA: F-53 MOTORHOME







GVWR lbs.	BASE TIRE	WB	F HEIGHT AT FRONT AXLE[1,2] AT SPRING RATING	R HEIGHT AT FRONT AXLE[1,2] AT SPRING RATING	LH[2] AT SPRING RATING	OH	L	M	A	BB	CC	FW	RW	REAR WHEEL MEASUREMENTS OW	TH	TW
18,000	245/70 R19.5	4521 [178] 4826 [190] 5283 [208]	710.0 [28]	770.0 [30.3]	790.0 [31.1]	2688.0 [105.8]	1079.0 [42.5]	24.0 [0.9]	248.0 [9.8]	810.0 [31.9]	391.0 [15.4]	2327.0 [91.6]	1848.0 [72.8]	2424.0 [95.4]	283.0 [11.1]	638.0 [25.1]
22,000	245/70 R19.5	5283 [208] 5791 [228]	775.0 [30.5]	779.0 [30.7]	866.0 [34.1]	2688.0 [105.8]	1079.0 [42.5]	24.0 [0.9]	248.0 [9.8]	810.0 [31.9]	391.0 [15.4]	2327.0 [91.6]	1848.0 [72.8]	2424.0 [95.4]	283.0 [11.1]	638.0 [25.1]
	235/80 R19.5	5791 [228] 6147 [242]	775.0 [30.5]	835.0 [32.9]	866.0 [34.1]	2688.0 [105.8]	1079.0 [42.5]	24.0 [0.9]	233.0 [9.2]	942.0 [37.1]	443.0 [17.4]	2305.0 [90.7]	1785.0 [70.3]	2423.0 [95.4]	221.0 [8.7]	640.0 [25.2]
24,000	255/80 R22.5	6401 [252]	792.0 [31.2]	861.0 [33.9]	894.0 [35.2]	2688.0 [105.8]	1079.0 [42.5]	24.0 [0.9]	252.0 [9.9]	941.5 [37.1]	455.7 [17.9]	2345.0 [92.3]	1783.4 [70.2]	2418.0 [95.2]	235.0 [9.3]	594.0 [23.4]
26,000	255/80 R22.6	5791 [228] 6147 [242] 6401 [252]	792.0 [31.2]	861.0 [33.9]	894.0 [35.2]	2688.0 [105.8]	1079.0 [42.5]	24.0 [0.9]	252.0 [9.9]	941.5 [37.1]	455.7 [17.9]	2354.0 [92.7]	1783.4 [70.2]	2418.0 [95.2]	235.0 [9.3]	594.0 [23.4]

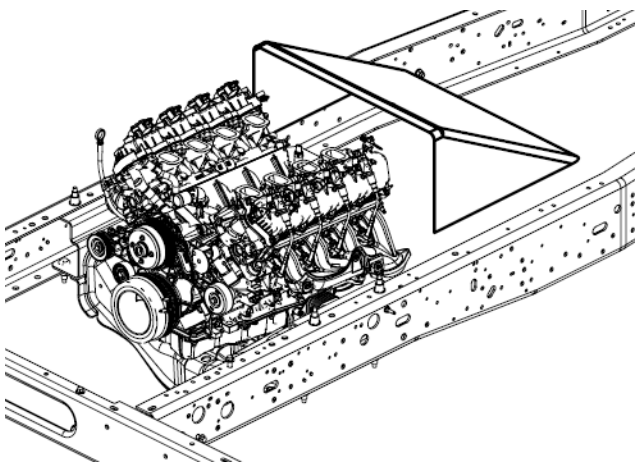
1 - THE F AND R HEIGHT DATA REPRESENT DINESIONS FROM THE GROUND TO 'FRAME DATUM LINE' (TOP OF FRAME RAIL) OF A BASE/STANDARD VEHICLE WITH NO OPTIONS.
2 - THESE DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL HEIGHT MAY VARY DUE TO PRODUCTION TOLERANCES.

NOTE- [ ] DIMENSION ARE INCHES

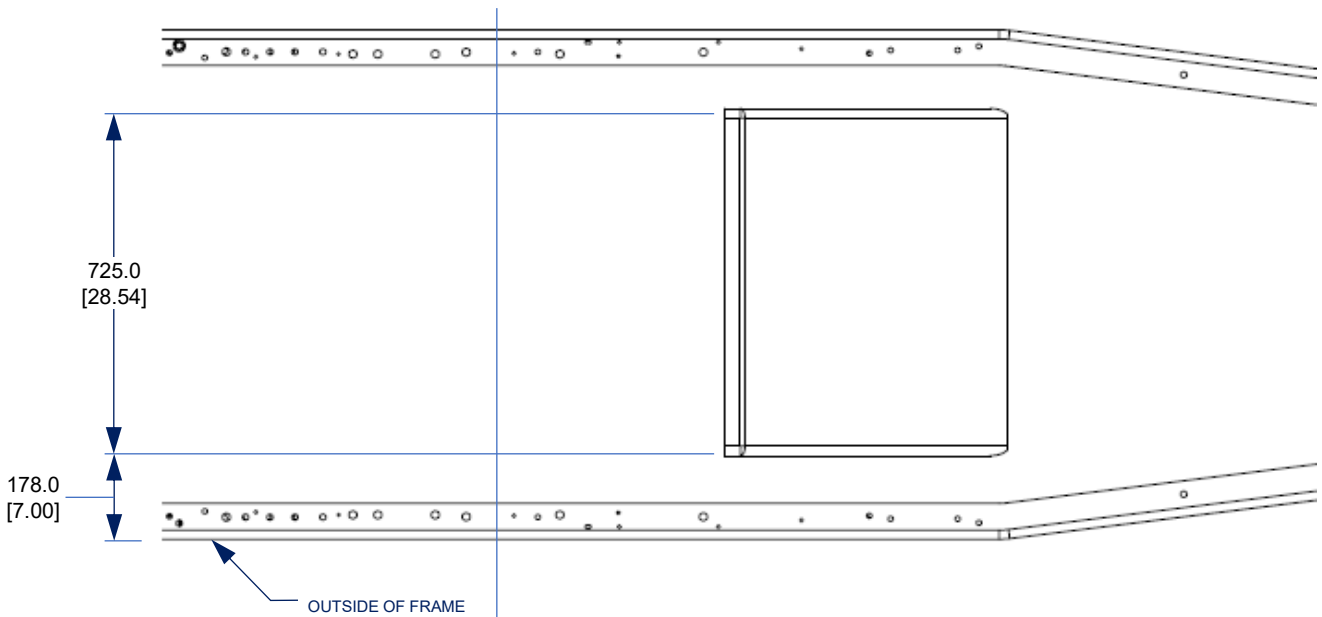
F-53 MOTORHOME / F-59 COMM. CHASSIS
ENGINE REMOVAL CLEARANCE ZONE

ENGINE REMOVAL CLEARANCE ZONE

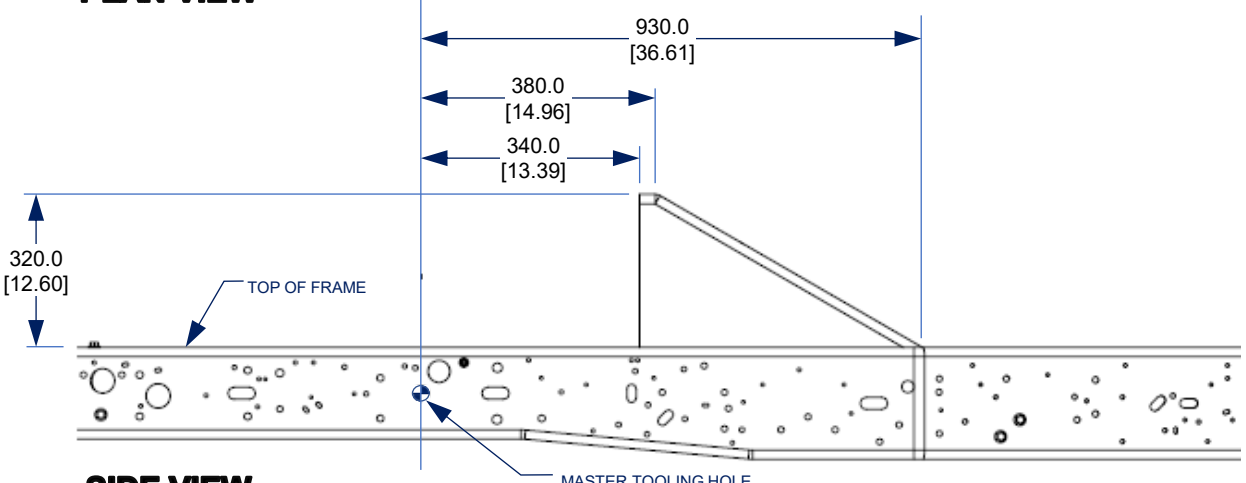
- Detailed engine removal instructions available via Ford Workshop Manual, available via www.fordtechservice.dealerconnection.com web site (subscription fees may apply).
- Zone will require an open path for engine removal.
- Structural members within the Zone shall be designed to be easily removed and re-installed.
- Cutting and/or welding in service is not permissible.
- CAD file of this Zone is available via https://www.fordpro.com/en-us/upfit/contact-us/ CAD File Name: F53_Engine_Remove_Zone



ISO VIEW



PLAN VIEW



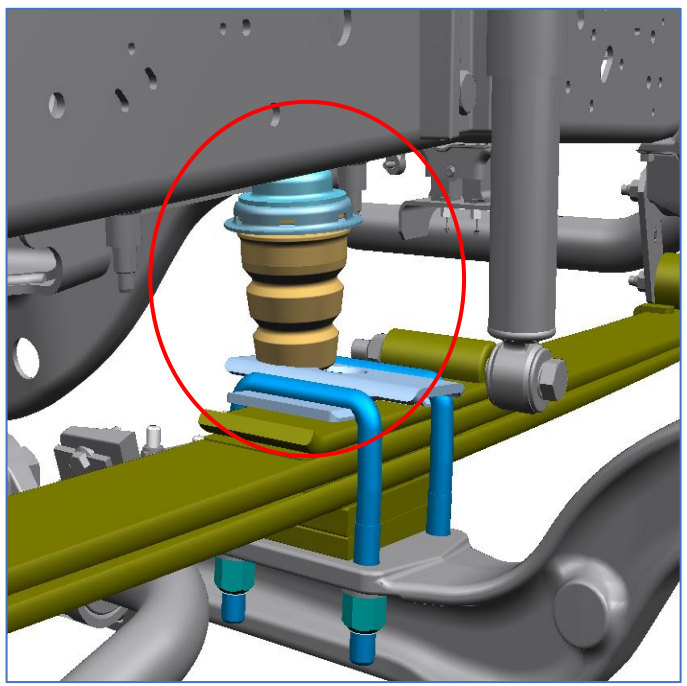
SIDE VIEW

NOTE- [ ] DIMENSION ARE INCHES

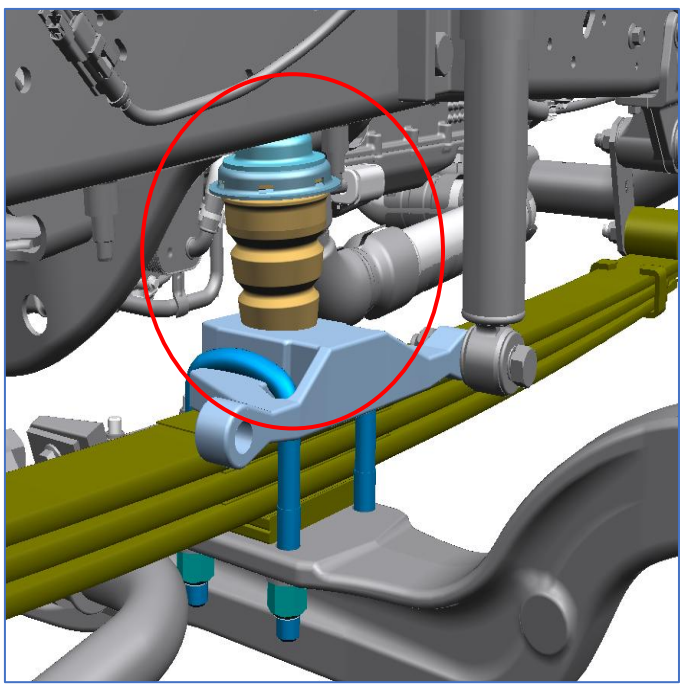
F-53 MOTORHOME / F-59 COMM. CHASSIS
F-53 JOUNCE BUMPERS

Front and Rear Jounce Bumpers - F53 20.5/22/24/26K GVWR

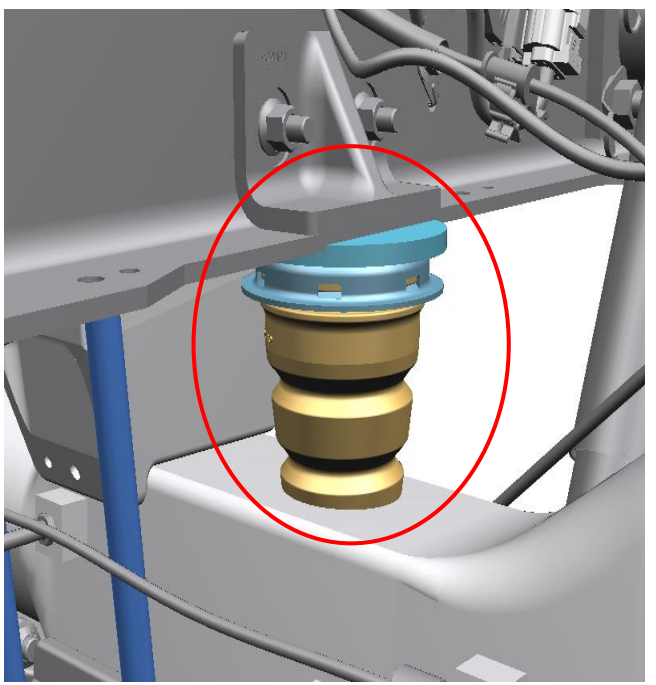
F-53 Chassis are equipped with microcellular progressive jounce bumpers.-They are an active working part of the suspension system. Under normal loading conditions, they are designed to rest on the suspension allowing a smooth transition to full compression. This provides incremental dampening and ride quality by supporting the fully upfit motorhome while also assisting with the roll/sway of the chassis.



20.5/22K GVWR Front Suspension



24/26K GVWR Front Suspension



20.5/22/24/26K GVWR Rear Suspension

F-53 MOTORHOME / F-59 COMM. CHASSIS

MODEL LINEUP: F59 COMMERCIAL CHASSIS

DRIVE	WB in.	ENGINE	TRANSMISSION	MAXIMUM GVWR lb.	MAXIMUM PAYLOAD lb.(1)	MAXIMUM GCWR lbs	MAXIMUM TRAILER WEIGHT lbs	GAWR lb.(2) FRONT lbs	GAWR lb.(2) REAR lbs	BASE STRIP CHASSIS CURB lb(3) FRONT lbs	BASE STRIP CHASSIS CURB lb(3) REAR lbs	BASE STRIP CHASSIS CURB lb(3) TOTAL lbs
4X2	158	7.3L	AUTOMATIC	16,000	10,080	23,000	7,000	6,500	1,100	3,054	2,857	5,911
		7.3L	AUTOMATIC	19,500	13,480	26,000	6,500	7,000	13,500	3,197	2,821	6,018
	168	7.3L	AUTOMATIC	19,500	13,470	27,200	7,700(4)	7,000	13,500	3,198	2,828	6,026
	178	7.3L	AUTOMATIC	16,000	10,050	23,000	7,000	6,500	11,000	3,191	2,754	5,945
		7.3L	AUTOMATIC	19,500	13,460	26,000	6,500	7,000	13,500	3,198	2,835	6,033
		7.3L	AUTOMATIC	22,000	15,610	29,700	7,700	8,000	15,000	3,276	3,112	6,388
	190	7.3L	AUTOMATIC	19,500	13,400	26,000	6,500	7,000	13,500	3,209	2,887	6,096
	208	7.3L	AUTOMATIC	22,000	15,610	26,000	4,000	8,000	15,000	3,276	3,112	6,388
		7.3L	AUTOMATIC	22,000	15,610	29,700	7,700(4)	8,000	15,000	3,276	3,112	6,388

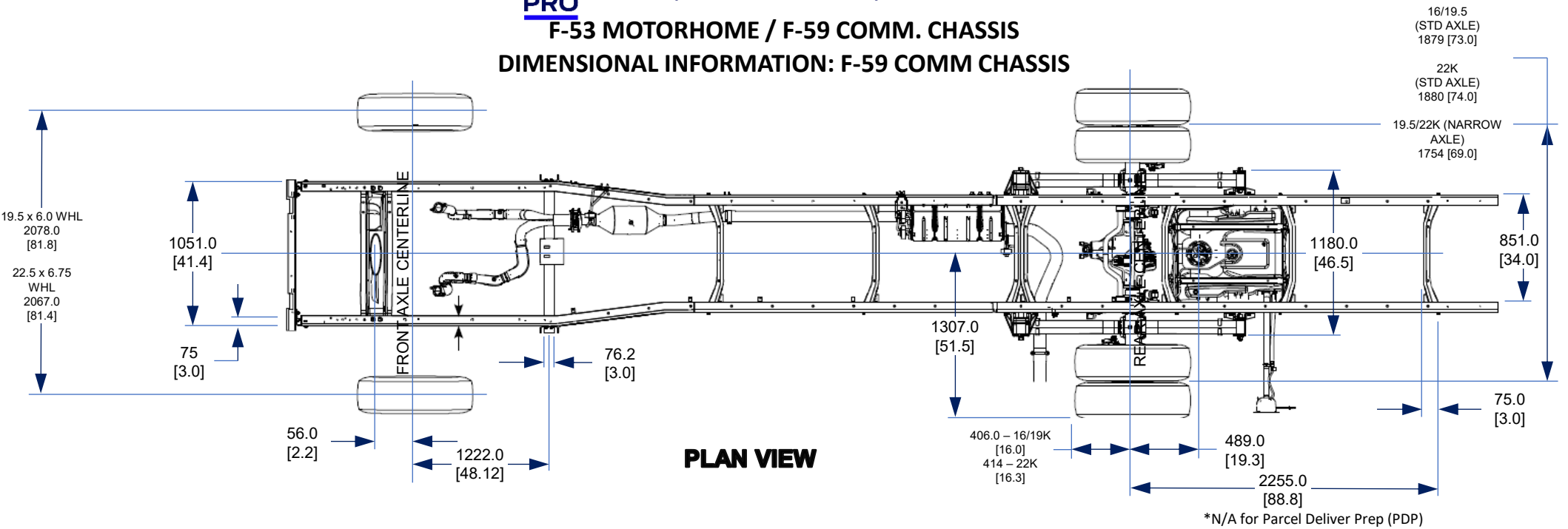
1. Load rating represents maximum allowable weight of people, cargo and body equipment and is reduced by optional equipment weight.
2. Gross Axle Weight Rating is determined by the rated capacity of the minimum component of the axle system (axle, springs, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVW rating or GAWR (front or rear).
3. Base Curb Weights shown above consider the strip chassis weight with standard equipment, full fuel tank and other fluids filled to capacity. Optional equipment weights are in pounds as follows (Front/Total):
4. Parcel Delivery Van Package only.

Ford PRO

Body Builders Layout Book

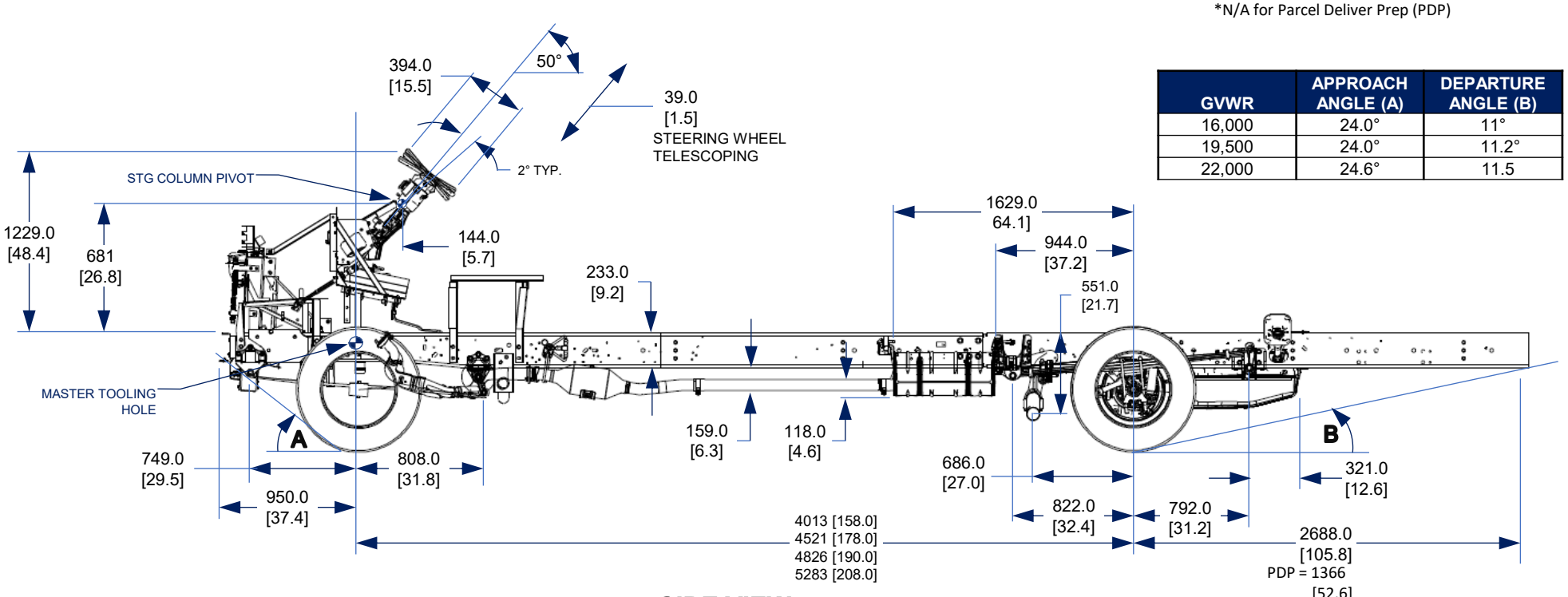
F-53 MOTORHOME / F-59 COMM. CHASSIS

DIMENSIONAL INFORMATION: F-59 COMM CHASSIS



PLAN VIEW

*N/A for Parcel Deliver Prep (PDP)

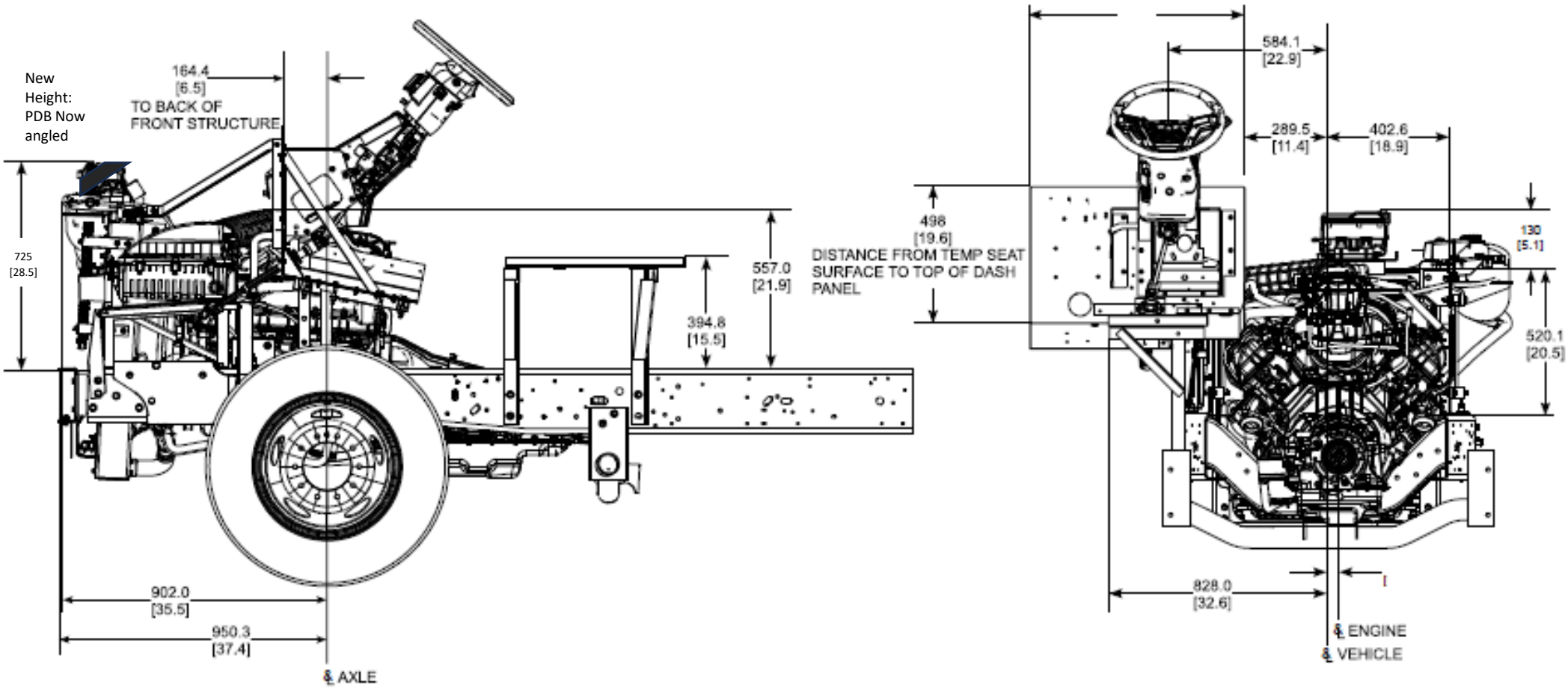


GVWR	APPROACH ANGLE (A)	DEPARTURE ANGLE (B)
16,000	24.0°	11°
19,500	24.0°	11.2°
22,000	24.6°	11.5

SIDE VIEW

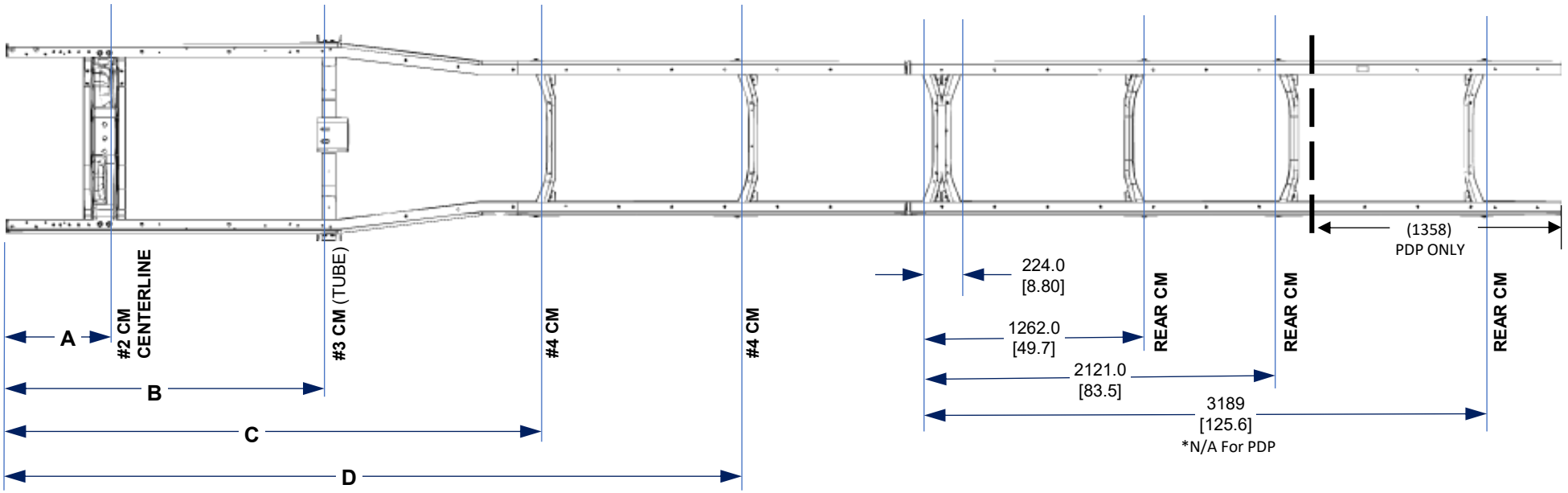
NOTE- [ ] DIMENSION ARE INCHES

F-53 MOTORHOME / F-59 COMM. CHASSIS
F-59 COMMERCIAL CHASSIS FRONT STRUCTURE



NOTE- [ ] DIMENSION ARE INCHES

F-53 MOTORHOME / F-59 COMM. CHASSIS
FRAME: F-59 CROSSMEMBER LOCATIONS



DIM.	158" WB		168" WB		178" WB		190" WB		208" WB	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
A	796.0	[31.3]	796.0	[31.3]	796.0	[31.3]	796.0	[31.3]	796.0	[31.3]
B	2073.0	[81.6]	2073.0	[81.6]	2073.0	[81.6]	2073.0	[81.6]	2073.0	[81.6]
C	2994.0	[117.9]	3133.0	[123.3]	3385.0	[133.3]	3436.0	[135.3]	3002.0	[118.2]
D	NA	NA	NA	NA	NA	NA	NA	NA	4147.0	[163.3]

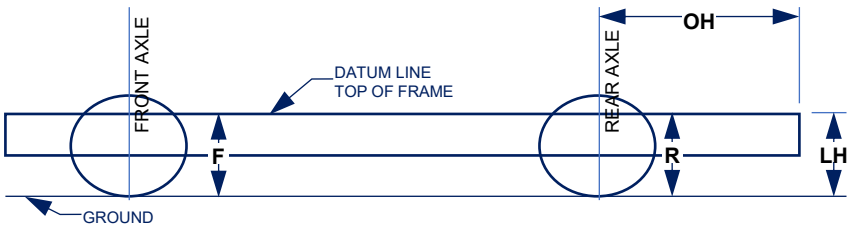
MEASUREMENTS TAKEN FROM FRONT EDGE OF LOWER FLANGE OF RAIL

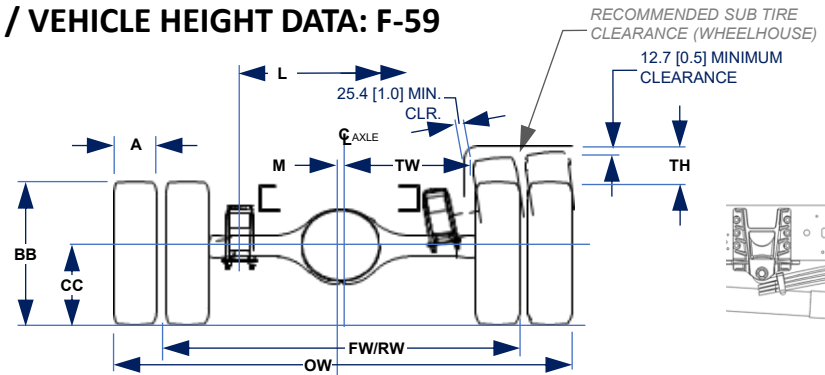
NOTES:
- UNLESS OTHERWISE NOTED, DIMENSIONS ARE TO THE CENTERLINE OF CROSSMEMBER FASTENERS.
- MEASUREMENTS FROM FRONT EDGE OF LOWER FRAME. SUBTRACT 9 MM IF MEASURED FROM TOP FRONT EDGE OF FRAME WEB.

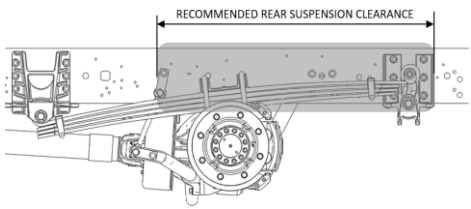
NOTE- [ ] DIMENSION ARE INCHES

Ford PRO Body Builders Layout Book

F-53 MOTORHOME / F-59 COMM. CHASSIS
AXLE / TIRE / VEHICLE HEIGHT DATA: F-59







GVWR lbs.	BASE TIRE	WB	F HEIGHT AT FRONT AXLE[1,2] AT SPRING RATING	R HEIGHT AT FRONT AXLE[1,2] AT SPRING RATING	LH[2] AT SPRING RATING	OH	L	M	A	BB	CC	FW	RW	REAR WHEEL MEASUREMENTS OW	TH	TW
16,000	225/70R19.5	158	800 [31.5]	830 [32.7]	871 [34.3]	2688 [105.8]	1079 [42.5]	27.7 [1.1]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.1]	270 [10.6]	638 [25.1]
		178	800 [31.5]	830 [32.7]	734 [34.3]	2688 [105.8]	1079 [42.5]	27.7 [1.1]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.1]	270 [10.6]	638 [25.1]
19,500	225/70R19.5	158	787 [31]	835 [32.9]	876 [34.5]	2688 [105.8]	1079 [42.5]	30.2 [1.2]	236 [9.3]	779 [30.7]	383 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.1]	274 [10.8]	638 [25.1]
		178	787 [31]	835 [32.9]	876 [34.5]	2688 [105.8]	1079 [42.5]	30.2 [1.2]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [90.7]	274 [10.8]	638 [25.1]
		190	787 [31]	835 [32.9]	876 [34.5]	2688 [105.8]	1079 [42.5]	30.2 [1.2]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.1]	274 [10.8]	638 [25.1]
		208	787 [31]	835 [32.9]	876 [34.5]	2688 [105.8]	1079 [42.5]	30.2 [1.2]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.1]	274 [10.8]	638 [25.1]
22,000	225/70R19.5	208	795 [31.3]	848 [33.4]	901 [35.5]	2088 [105.8]	1479 [42.5]	30.2 [1.2]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1846 [72.7]	2304 [90.7]	283 [11.1]	638 [25.1]

PDP (Parcel Delivery Package)

19,500	245/70R19.5	168	795 [31.3]	826 [32.5]	856 [33.7]	1330 [52.4]	1060 [41.7]	30.2 [1.2]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1719 [67.6]	2177 [85.7]	283 [11.1]	638 [25.1]
22,000	245/70R19.5	178	795 [31.3]	826 [32.5]	856 [33.7]	1330 [52.4]	1060 [41.7]	30.2 [1.2]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1719 [67.6]	2177 [85.7]	283 [11.1]	638 [25.1]
		208	795 [31.3]	826 [32.5]	856 [33.7]	1330 [52.4]	1060 [41.7]	30.2 [1.2]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1719 [67.6]	2177 [85.7]	283 [11.1]	638 [25.1]

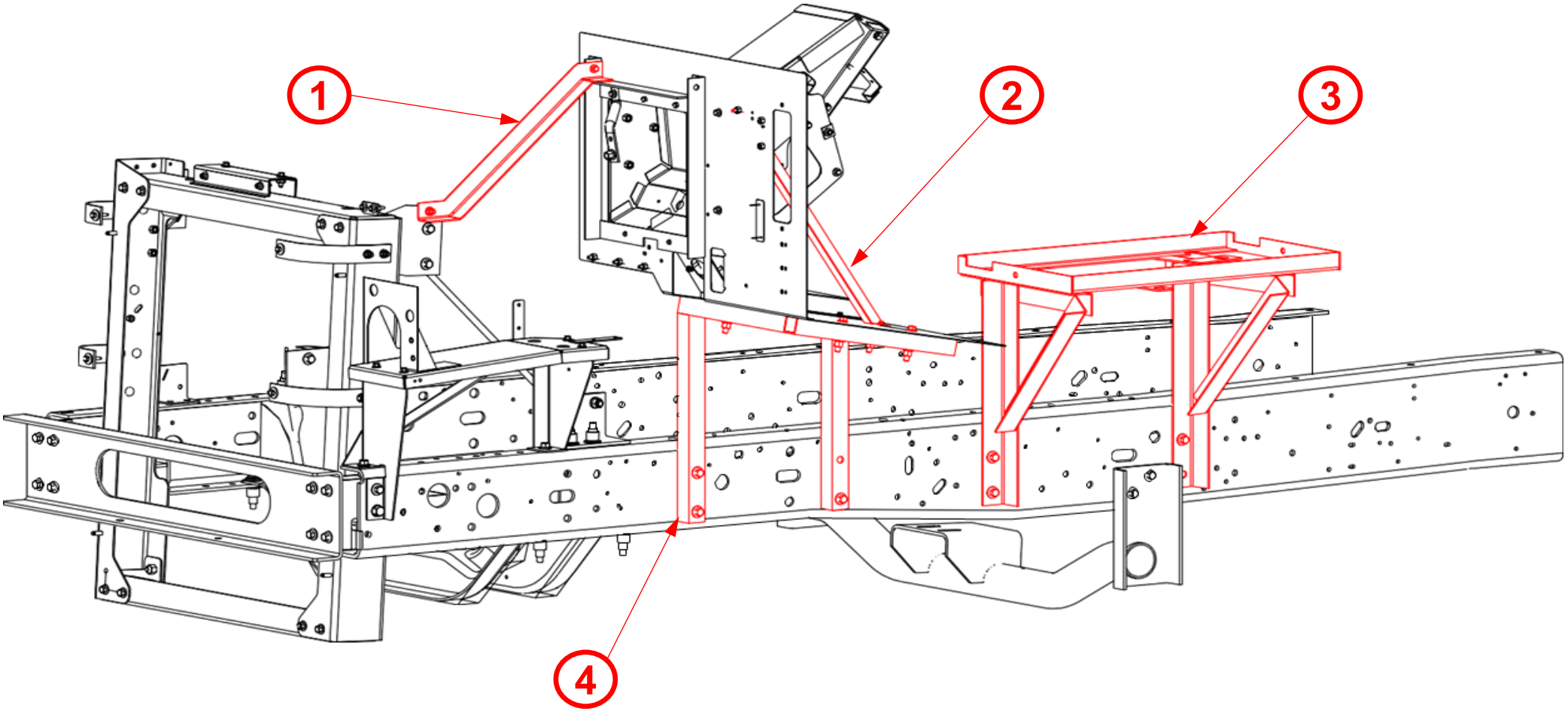
1 - THE F AND R HEIGHT DATA REPRESENT DINESIONS FROM THE GROUND TO 'FRAME DATUM LINE' (TOP OF FRAME RAIL) OF A BASE/STANDARD VEHICLE WITH NO OPTIONS.
2 - THESE DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL HEIGHT MAY VARY DUE TO PRODUCTION TOLERANCES

MEASURED IN CAD AT STRIPPED WEIGHT

NOTE- [ ] DIMENSION ARE INCHES

F-53 MOTORHOME / F-59 COMM. CHASSIS

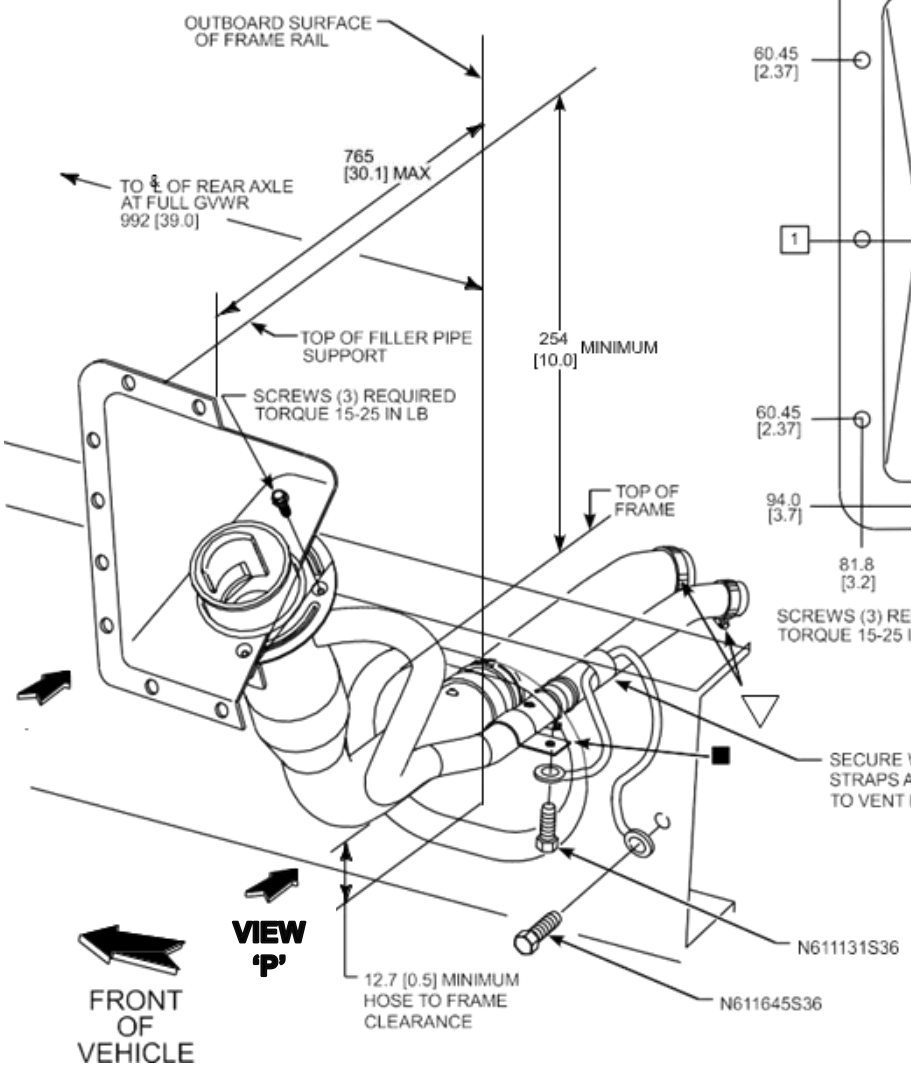
F-59 COMMERCIAL CHASSIS: TEMPORARY SHIPPING COMPONENTS

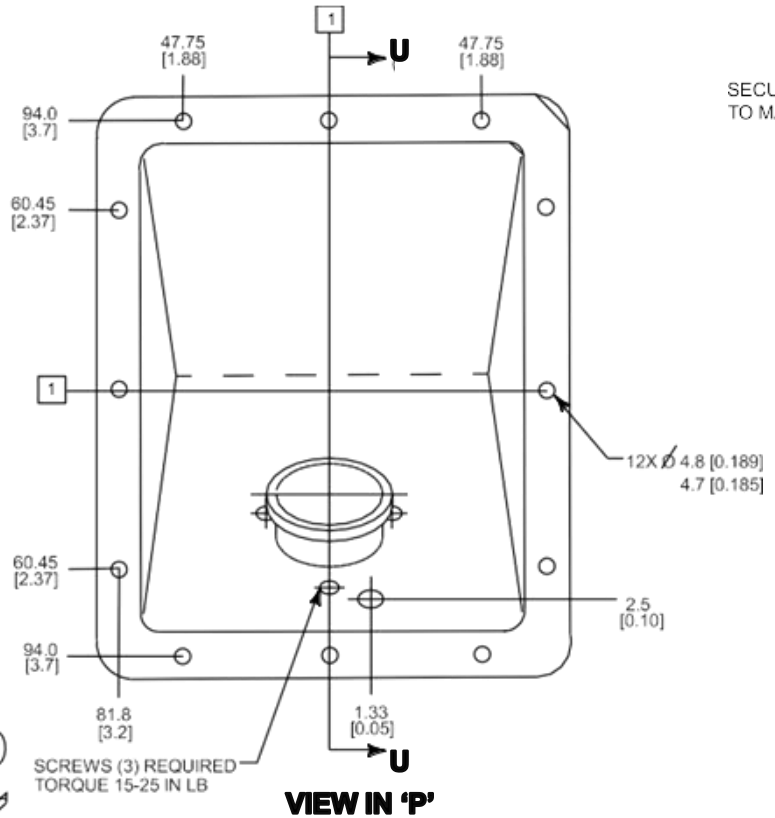


NOTE: TEMPORARY SHIPPING COMPONENTS
REMOVE ALL TEMPORARY COVERS, BRACKETS, AND STRUCTURES PRIOR TO VEHICLE COMPLETION

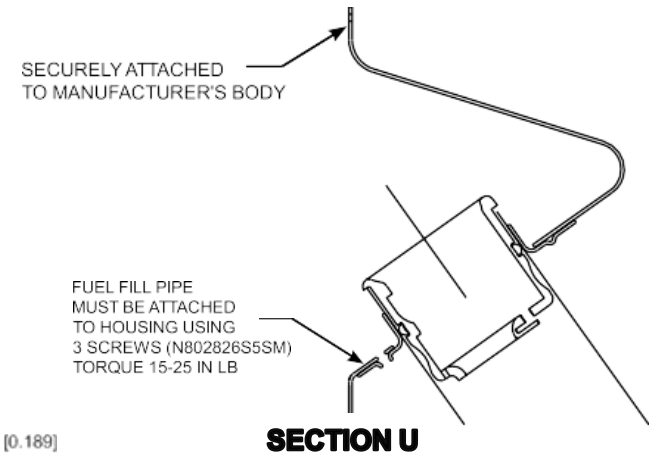
F-53 MOTORHOME / F-59 COMM. CHASSIS

FUEL FILLER PIPE

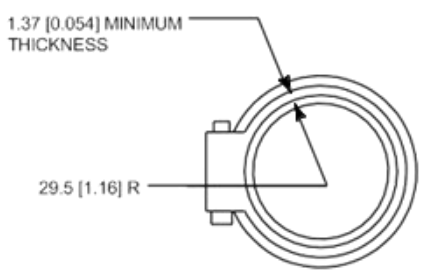

OUTBOARD SURFACE OF FRAME RAIL
765 [30.1] MAX
℄ OF REAR AXLE AT FULL GVWR 992 [39.0]
TOP OF FILLER PIPE SUPPORT
254 [10.0] MINIMUM
SCREWS (3) REQUIRED TORQUE 15-25 IN LB
TOP OF FRAME
SECURE WITH TIE STRAPS AS REQUIRED TO VENT HOSE
N611131S36
N611645S36
12.7 [0.5] MINIMUM HOSE TO FRAME CLEARANCE
VIEW 'P'
FRONT OF VEHICLE



VIEW IN 'P'


SECURELY ATTACHED TO MANUFACTURER'S BODY
FUEL FILL PIPE MUST BE ATTACHED TO HOUSING USING 3 SCREWS (N802826S5SM) TORQUE 15-25 IN LB

SECTION U



VIEW T

✳ WORM GEAR DRIVEN HOSE CLAMPS. STRUCTURAL BRACKET AND BLIND RIVETS ARE NOT PROVIDED BY FORD MOTOR COMPANY

■ DIMENSIONS USING HOSE AS SUPPLIED BY FORD MOTOR COMPANY

▽ WORM GEAR DRIVEN HOSE CLAMPS TORQUE 2.8 – 4.0 NEWTON METERS (25 – 35 IN LBS.)

■ WORM GEAR DRIVEN HOSE CLAMP ✳ MUST FIT ECURELY OVER A 57.2 (2,25) O.D. FILL PIPE AND SECOND STAGE VEHCILE MANUFACTURERS BRACKET ✳

▽ CRITICAL CONTROL ITEM

WARNING: IT IS MANDATORY TO USE THE SUPPLIED RUBBER HOSE FOR INSTALLING THE FUEL PIPE. ANY INCREASE IN LENGTH OR CHANGE IN MATERIAL OF THE SUPPLIED RUBBER HOSE WILL RESULT IN VOIDING THE EVAPORATIVE EMISSIONS CERTIFICATION

F-53 MOTORHOME / F-59 COMM. CHASSIS
FUEL SYSTEMS-AUX FUEL PORT

All F-Series F-59 Stripped Chassis and F-53 Motorhome Chassis come equipped with an Auxiliary Fuel Port located in the fuel sender unit on the top of the fuel tank. These Aux Fuel Ports can provide a fuel supply to upfitter-installed equipment such as generators.

Note: No Return Fuel port provision available on F-59 due to fuel tank configuration

To use the auxiliary fuel port on the F53/59 Chassis Cab aft-of-axle or mid-ship fuel tank, a service kit can be obtained from your local Ford dealership parts department.

Aux Fuel Port Service Kit Number: 9C2Z-9B210-A

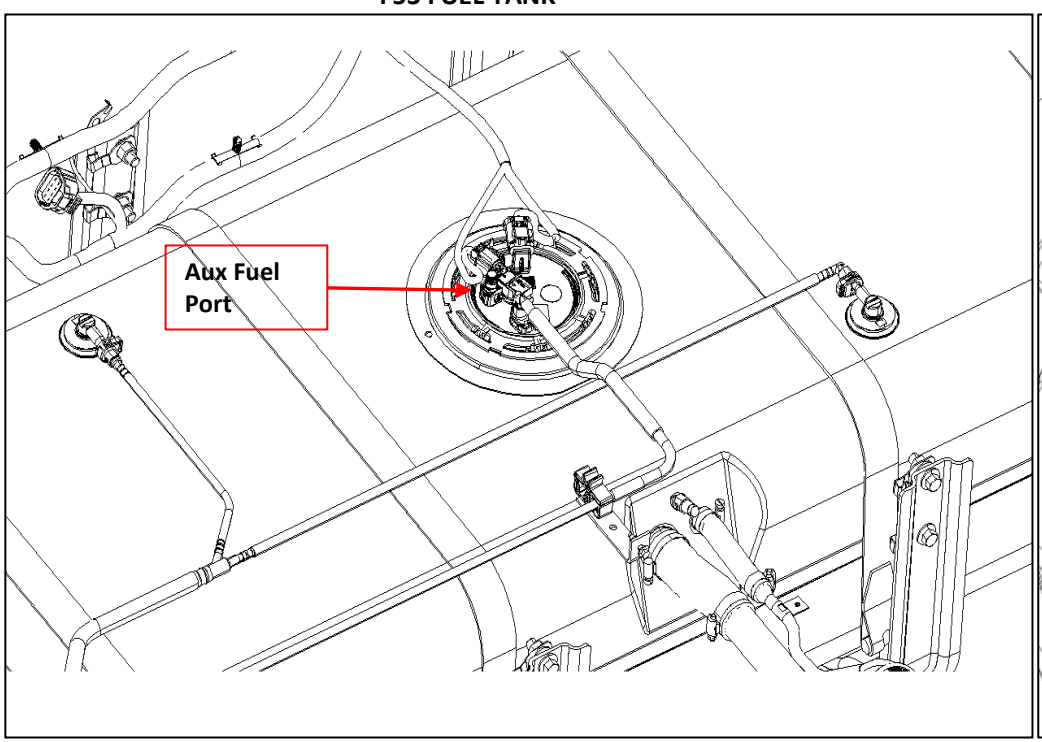
The kit includes a quick connector, a clamp and tag. Install this kit to allow installed equipment (such as a generator) to use fuel from the vehicle fuel tank.

*Please reference the appropriate Ford Workshop Manual for information regarding the fuel system

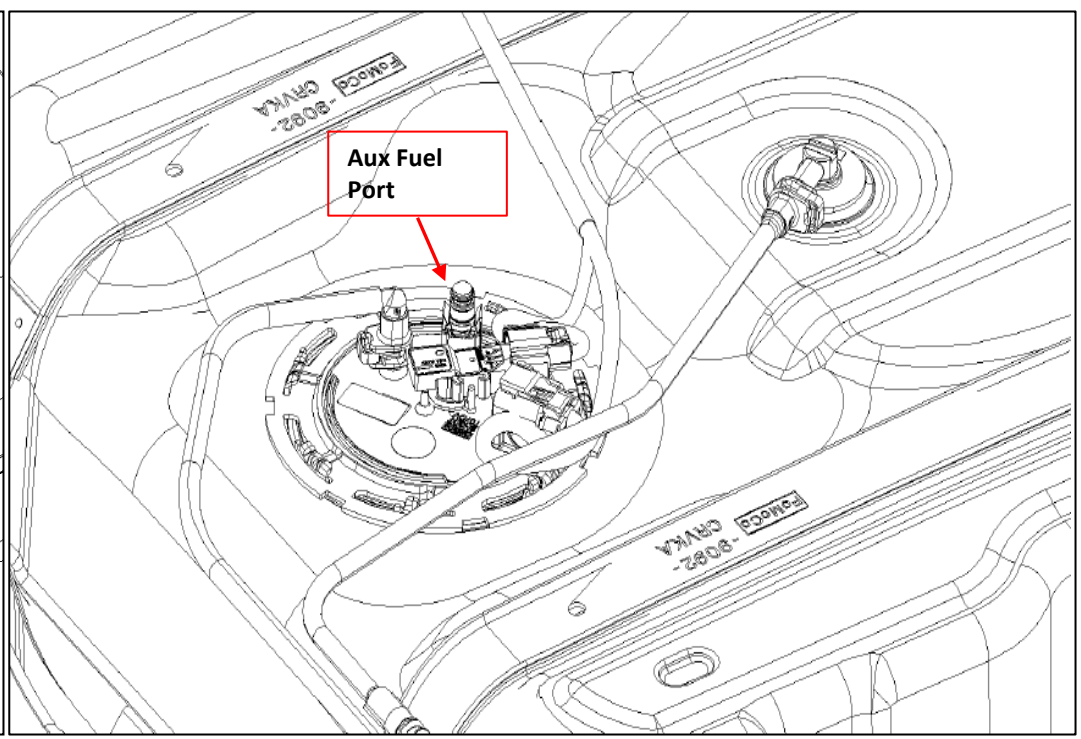
Model	Fuel Tank Capacity *	
	40 Gallon	80 Gallon
	Remaining Fuel Volume (Gallons) at Auxiliary Fuel Tube Shut-off	
F-53 Gas	*	11.7
F-59 Gas	5.25	*

* Fuel volumes are estimated

F53 FUEL TANK

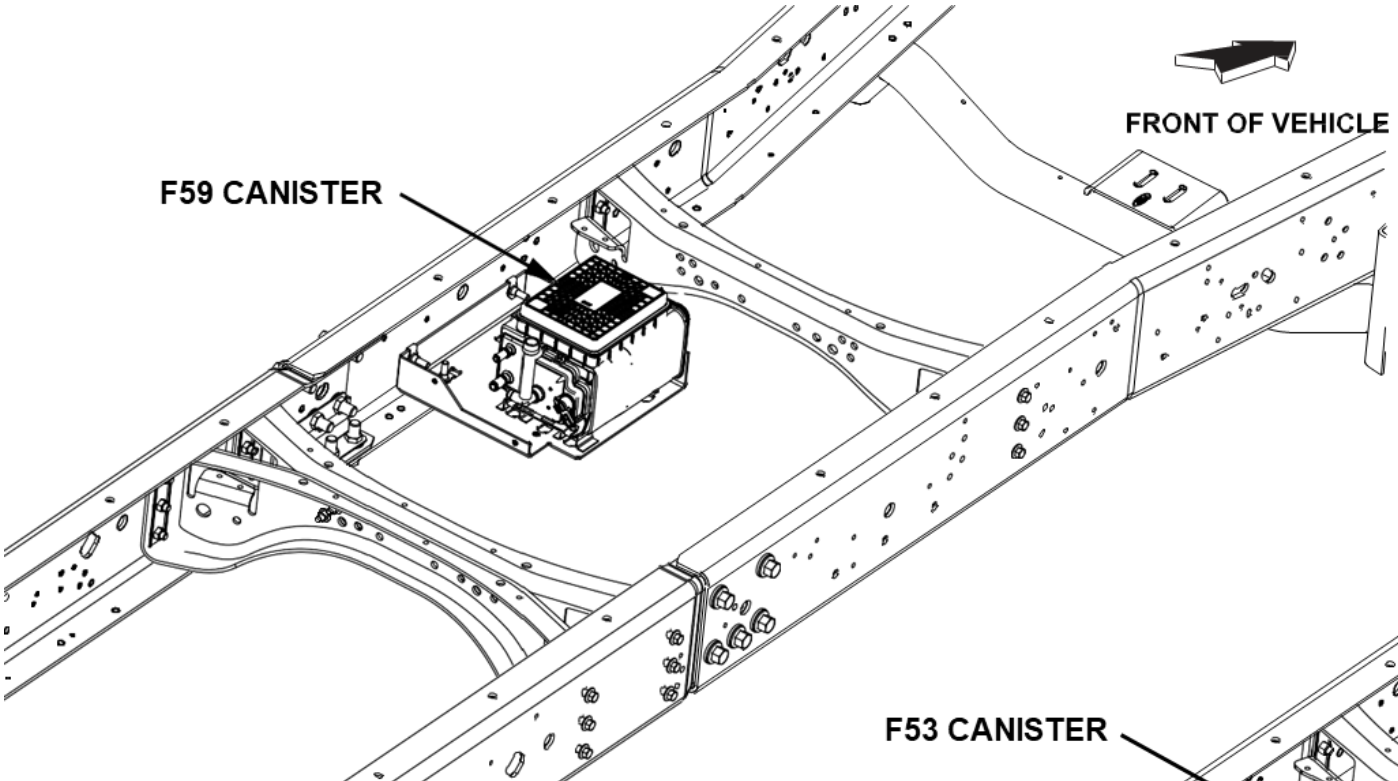


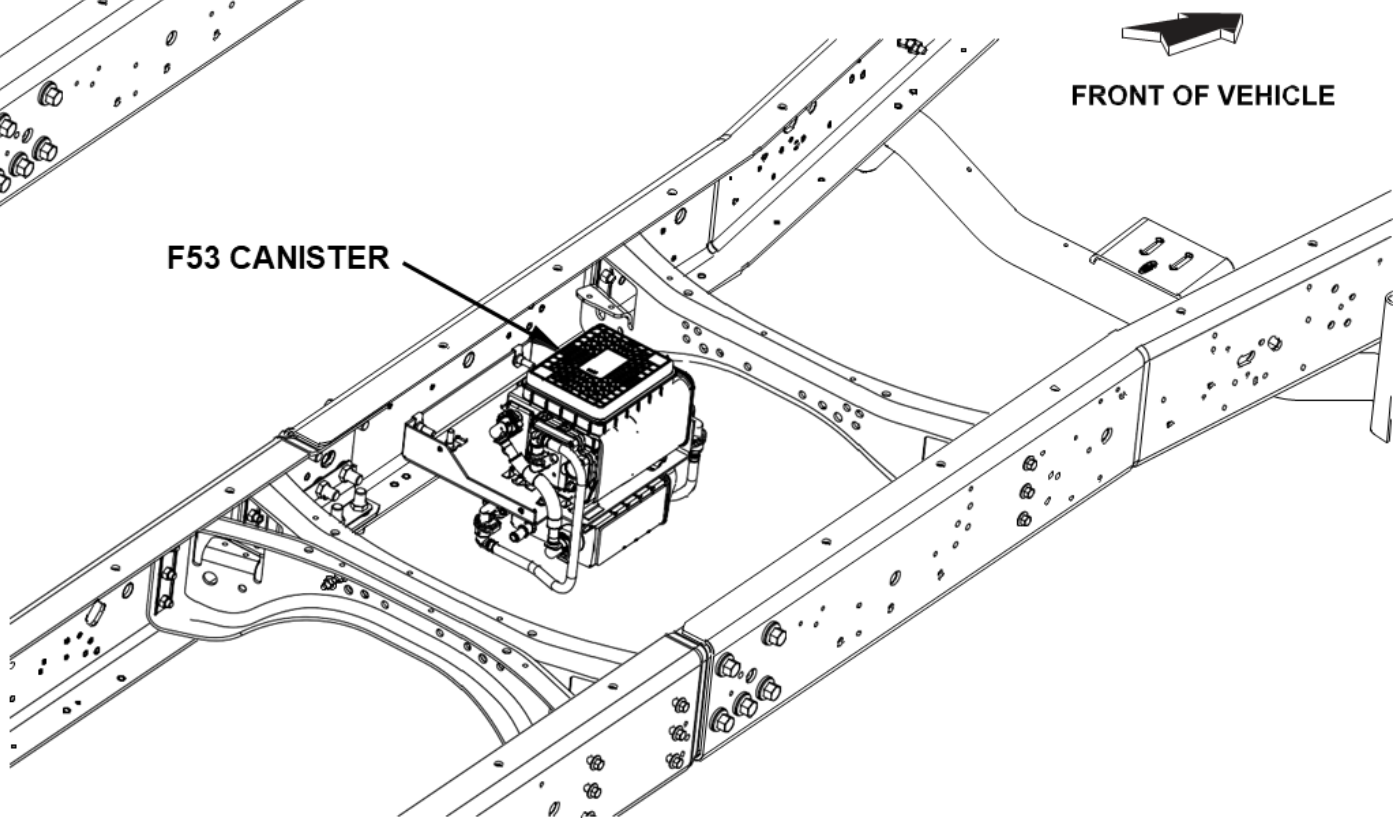
F59 FUEL TANK



(Cont'd next page)

F-53 MOTORHOME / F-59 COMM. CHASSIS
EVAPORATIVE EMISSIONS CANNISTER





F-53 MOTORHOME / F-59 COMM. CHASSIS

GUIDELINES FOR MODIFYING FORD TRUCK WHEELBASES EQUIPPED WITH ELECTRONIC STABILITY CONTROL (ESC)

All F-53 and F-59 Chassis have Electronic Stability Control (ESC) as STANDARD equipment, with an option to delete ESC. **Wheelbase modification of a truck equipped with ESC affects vehicle function, which may result in sub-standard performance of the ESC system and/or ESC, Anti-lock Brake or Traction Control faults/lights unless module calibrations are updated as appropriate for the modified wheelbase.**

Ford supports upfitters that modify wheelbases of affected vehicles with ESC with an app in the Ford Diagnosis and Repair System (FDRS) tool that will update ESC calibrations as needed. See the FDRS Wheelbase Configuration Application section on the next page for details on how to use the app. Subsequent stage manufacturers that do not have an FDRS tool can purchase the software license and check for compatible scan tool hardware here, or contact their local Ford Dealership for assistance.

Modified wheelbase lengths within the ranges provided below are supported by the FDRS Wheelbase Configuration App. Each individual range of wheelbase length provided represents a unique ESC calibration. In most cases, the factory wheelbase and modified wheelbase lengths will be in different ranges and will require use of the FDRS Wheelbase Configuration App to revise the ESC calibration. In cases where the factory wheelbase and modified wheelbase are within the same range, the ESC calibration does not need to be updated.

F53 – Motorhome (Recreation Vehicle):

- 18k GVWR
  - 158-170”
  - 171-184”
  - 185-198”
  - 199-216”
  - 217-238”
- 22k GVWR with 19.5” tires
  - 168-184”
  - 196-211”
  - 212-229”
  - 230-252”
- 22k GVWR with 22.5” tires
  - 196-211”
  - 212-229”
  - 230-242”
- 24k – 26k GVWR
  - 212-229”
  - 230-242”
  - 243-260”

F59 – Step Van (Commercial Vehicle):

- 16k GVWR
  - 158-170”
  - 171-184”
- 19.5k GVWR
  - 158-170”
  - 171-184”
  - 185-198”
  - 199-216”
- 22k GVWR
  - 168-178”
  - 197-208”

If a modified wheelbase length outside of the listed ranges is planned, the vehicle should be ordered with the available ESC Delete option as it will not be supported with proper ESC calibrations.

Whether the FDRS tool is used to update the vehicle calibrations or not, it is the responsibility of the final stage manufacturer to evaluate the completed vehicle to ensure vehicle performance is acceptable to the end customer.

NOTES:

- The chassis wheelbase shall not be modified shorter than the shortest factory wheelbase offered for that series or GVWR
- Vehicles with Lane Departure Warning feature: The chassis wheelbase should not be shortened more than 16 inches from the original wheelbase as the feature performance will be negatively affected.
- Vehicles with Tire Pressure Monitor System (TPMS) feature: Increasing the distance between the TPMS receiver module and either front or rear axle beyond the largest spacing provided by Ford may negatively affect feature performance. The final stage manufacturer is responsible for evaluating TPMS system performance on the completed vehicle.
- Statements of Conformity in the vehicle Incomplete Vehicle Manual may have conditions that are affected by the vehicle wheelbase. Please review the IVM and use the modified wheelbase value to complete assessments where appropriate.
- The General Body Builder Layout Book contains much information regarding wheelbase modifications. A search for the term “wheelbase” within the General BBLB will reveal related content, see the following sections under “Design Recommendations” at a minimum:
  - Fuel System
  - Electrical – sections regarding “Electrical Wiring”
  - Brake System
  - Frame – sections on wheelbase modifications for light and medium vehicles

F-53 MOTORHOME / F-59 COMM. CHASSIS

GUIDELINES FOR MODIFYING FORD TRUCK WHEELBASES EQUIPPED WITH ELECTRONIC STABILITY CONTROL (ESC) - CONT

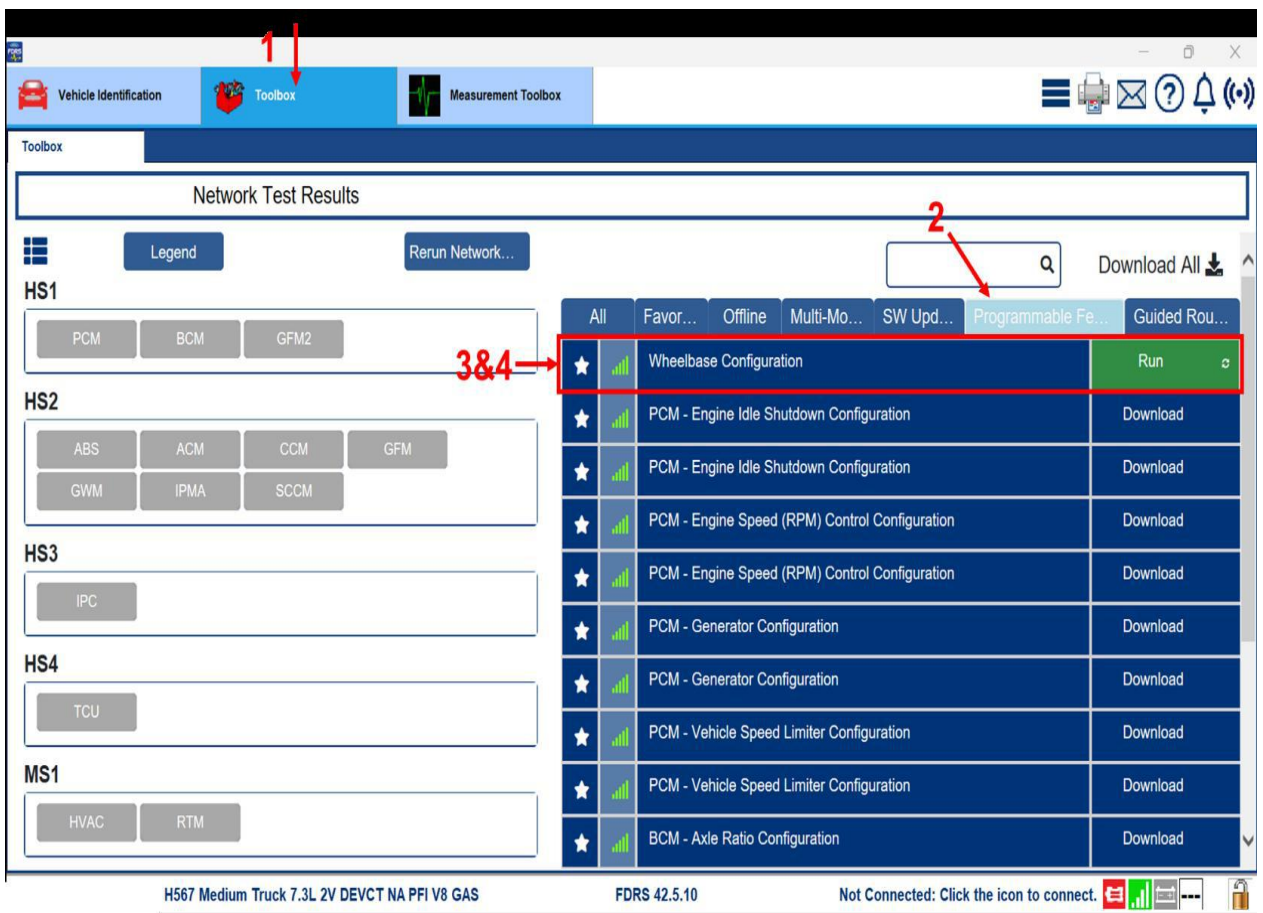
FDRS Wheelbase Configuration Application

This application will be used to update the ABS software and load the correct ESC calibration for the modified vehicle wheelbase.

Open the Ford FDRS tool and connect to the vehicle being modified, then:

1. Select “Toolbox”
2. Select “Programmable Features”
3. Download the latest version of “Wheelbase Configuration”
4. Run “Wheelbase Configuration”
5. Password: “M43WBSTRETCH” (all caps)
6. When prompted, you will need to select the range the modified wheelbase falls into (all values in Inches)

Screen Captures from the FDRS tool are provided below to help visualize the selections.



RECOMMENDED PROCEDURES PRIOR TO AND AFTER ANY WHEELBASE MODIFICATIONS

FUNCTIONAL TEST PROCEDURE FOR F5X STRIPPED CHASSIS VEHICLES VALIDATING PARK BRAKE FUNCTION

1. With the vehicle on flat/level ground, start the engine and apply park brake using park brake pedal.
2. Shift vehicle to drive position.
3. With the park brake fully applied, accelerate to 1,500 rpm minimum, and confirm the vehicle does not move.
4. If the vehicle does not move with park brake actuated, the park brake is functioning properly.

FUNCTIONAL TEST PROCEDURE FOR F-53/F-59 VEHICLES DETECTING PARK BRAKE DRAG

1. With the vehicle on flat/level ground and engine running, shift the vehicle to reverse.
2. Allow the vehicle to begin moving in reverse.
3. While vehicle is in motion, shift into neutral.
4. Assessment for detecting park brake drag:

a. If the park brake is not dragging, the vehicle will smoothly coast to a stop.

b. If drag exists, vehicle will intermediately pulse and not smoothly come to a stop.

5.If drag exists, follow workshop manual procedure for park brake shoe adjustment

F-53 MOTORHOME / F-59 COMM. CHASSIS
BODY AND SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS

GENERAL NOTES
Rear departure angle of 8.1° minimum for the motorhome chassis should be maintained to protect the fuel tank at GVWR. Rear bumpers or underbody skids should be considered to minimize interference to ground.

BODY
1. Any structural member removed from the body or cowl assembly areas, except for the dunnage box supports, must be replaced or included in the body structure of any special body installed.
2. It is mandatory that the body builder establish a structurally sound combination of body and vehicle structure by securely fastening together the body and the frame. This requires a rigid body design and a thoroughly planned system of bolts, welds and other fastenings between the frame and body.
3. To ensure structural integrity is maintained, the vehicle's front structure must not be modified. To avoid interference problems with suspension components, body attachments to frame should not protrude below side member flange.
4. An access panel may be provided in the vehicle floor by the body builder to service the in- tank fuel pump.
5. The body builder should consider the addition of sound insulation to minimize engine and fan noise in the driver compartment.

FRAME
- The 24/26K GVWR frame utilizes 50,000 psi high-strength steel.
- The frame for the F-53 / F-59 chassis is designed to permit removal of the engine and transmission out-the-bottom. This is facilitated by bolt-in No. 2 and No.3 cross members. Body builders should not add permanent structures which preclude powertrain removal.

ENGINE
1. Engine compartments must be designed to eliminate any air circulation restriction that would affect the air induction and cooling systems. F-53 / F-59 engine compartments must prov ide adequate flow-through ventilation to prevent local temperatures from exceeding recommended maximums. Limits for critical engine components are shown in the table (see Cooling) on next page.
2. No modification of the air cleaner inlet duct is permissible. Removal or modification of this duct will affect function of the mass air meter, possibly causing drivability problems and increased tailpipe emissions.
3. The air induction inlet should not be closed off from fresh air; underhood air should not be the primary source of air into the inlet. Fresh dry air should be provided to the air box inlet. This can be accomplished in various manners, such as, providing a vent opening in the front of the vehicle, closing off the engine compartment to prevent recirculation of Underhood air, and/or ducting of air from grill opening to inlet.

SUSPENSION AND STEERING
1. No vehicle or component alterations are allowed which restrict or prevent steering wheel, column, intermediate shaft, or coupling assembly collapse/stroke travel during crash.
2. Relocating the power steering fluid reservoir is not recommended. If the reservoir is moved, care must be taken to ensure that the power steering hoses are not kinked; hoses should have generous radii. Keep the reservoir upright in a vertical position while in the process of relocating it to ensure that no air enters the system.

TRANSMISSION
Transmission components are sensitive to ambient temperatures. Underbody ventilation is critical and temperatures in specific areas should not exceed those listed in the table (see Cooling) on the next page.
It is mandatory that the shift linkage be readjusted after linkage repair, engine mount replacement or shimming, steering column replacement or repositioning, transmission replacement, or any repair which could change the linkage adjustment.

CLIMATE CONTROL
- A/C LINES - It is not recommended to attach/ retain the discharge A/C line or A/C suction line to any other components as these lines are subject to dynamic motion from the A/C compressor mounted on the engine.
- Reference the General BBLB for additional guidance
- Prior MY builds reference Bulletin Q-334R1

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COOLING
NOTE: Refer also to 'Design Recommendations – Cooling System" section.
1. Cooling inlet area revisions (grill, bumper slots, etc.) must not significantly alter the air flow and should be free from blockage such as spare tires, added brackets, etc. Restricted air flow can result in possible engine damage for which the installer maybe held liable, should any claims arise.
2. A minimum frontal grill opening of 370 square inches is required to provide satisfactory engine cooling. The grill opening should be directly in front of the radiator or ducted in such a manner to direct airflow through the radiator core. Battery(s) or other components should not be mounted in front of the radiator pr impede airflow through the radiator.
3. Engine and automatic transmission temperatures may be affected by completed front-end design. Component temperature limitations should not be exceeded (See table below).

F-53 / 59 STRIPPED CHASSIS
MAXIMUM ALLOWABLE COMPONENT TEMPERATURE

COMPONENTS	TEMPERATURE
FUEL RAILS / PRESSURE REGULATOR	200° F
ENGINE IGNITION SENSORS	250° F
EEC MODULE	175° F
FUEL PUMP DELIVERY MODULE	167° F
AUTO TRANSMISSION SENSORS	250° F
LOWER TRANSMISSION AREA (MOUNTS, GASKETS, ETC.)	250° F

NOTE: USE ONLY FORD FACTORY COOLERS / HEAT EXCHANGERS

EXHAUST
WARNING: TAILPIPE OUTLET CONFIGURATION
It is mandatory that the side tailpipe outlet configuration be retained, when any modification is made to the exhaust system, to reduce the possibility of the exhaust fume entry through rear openings. The outlet should not be located near any vent, window, door or body opening. The tailpipe or attenuator of any modified system should be above the departure angle of the finished vehicle.
The proper torque sequence and torque values are to be followed as described below for tailpipe extension:
1. Place U-bolt (GU94-5221-AA) over the extension pipe (GU94-5263-AA), at the end which secures to the tailpipe (GU94-5H211-AD).
2. Place the extension pipe over the tailpipe pipe until fully seated.
3. Orient tailpipe as needed to comply with "Tailpipe Outlet Configuration"
4. Place the U-Bolt 17mm to 19mm from the end of the extension pipe and tighten the first bolt until the clamp/U-Bolt is snug against the extension pipe.
5. Torque the nut that was not already run down to 55Nm +/-5Nm.
6. Torque the first nut to 55Nm +/-5Nm.

F-53 MOTORHOME / F-59 COMM. CHASSIS
BODY AND SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS

FUEL SYSTEM

1. The fuel tank for the F-53 / 59 chassis is located between the frame rails aft of the rear axle and is supported by straps and frame cross members. The body builder should consider skid plates or protective bars is the body structure does not adequately protect the lower and rear surfaces of the tank.
   Fuel tank clearance to the body or frame components is 0.75 inches minimum. The size of any flexible body mounts must not be considered as a part of this clearance.
   Suspension components must clear the fuel tank by 2.00 inches minimum through their functional geometry.
   A fuel filler kit is provided with the F-53 / 59 Chassis. This filler kit is installed and then tested on a representative chassis to verify that it is capable of providing acceptable fuel fill function without spray, spit back or premature shutoff. However, Ford Motor Company has no control over how the filler pipe and the vent line are installed or modified by the vehicle modifier. Consequently, the vehicle modifier must ensure that the fuel filler pipe and any extensions added to the fill or vent lines are adequately supported to prevent sagging that could cause spray, spit back or premature shutoff during normal fueling operations. The Final Stage Manufacturer is responsible for verifying acceptable fuel fill function on the completed vehicle.
2. Fuel filler and the vent hoses must not be exposed to sharp corners and should have a minimum of 1.00-inch clearance to the body and surrounding body and chassis components (except frame). If fuel filler hoses are in the vicinity of edges or corners, then shield/abrasion protection should be used. Sink traps (low spots in fuel filler and/or vent hose) are unacceptable. Lengthening/relocating the fuel filler pipe can only be done with the hoses supplied in the dunnage box and steel tube provided by the body builder. No substitute hose material is allowed. Total length of the original hose supplied in the dunnage box. The short shipping hoses provided on the chassis, as received, is for shipment only and should not be used in the final assembly of the fuel filler pipe. Failure to comply may void the evaporative emissions certification.
   - If fuel hoses or vent hoses are replaced, the new hoses must meet Ford Engineering Specifications.
   - Extra connections in the fuel filler hose or vent hose, caused by the use of extensions, should be avoided.
   - Use only the Ford-specified fuel cap. Caps other than the Ford original (such as aftermarket locking gas caps) are unacceptable.
   - Heat shields should be added if they are located in the vicinity of the catalyst and/or muffler.
   - No additional hose can be added to the cannister purge lines. Lengthening of the system can only be accomplished by replacing one or more of the steel tubes with a longer tube.
   - The number of joints and length of hose in the system cannot be increased. If any of the hose is damaged, it must be replaced with CADBAR II low permeability hose.
   - Fastener torque specs are 14 to 22 ft-ib for remounting of canister brackets to frame.

ELECTRICAL

Although there are many points in the electrical system to connect additional circuits, certain connection points provided are recommended for reliability and convenience. This section defines the recommended connection points for the F-Super Duty Class A Motorhome (F-53) & Commercial Chassis (F-59) and the maximum allowable electrical loads.
NOTE: When chassis wheelbases are lengthened, the body builder must maintain the original slack length in the wire harness leads that are affected by suspension movement (jounce & rebound).

QTY	COMPONENTS	TRADE NO.
2	HALOGEN HEADLAMP BULBS	9004
10	COMBINATION REAR LAMP BULBS (TAIL, BRAKE, TURN SIGNAL)	1157
2	BACK-UP LAMPS	1156
4	SIDE MARKER BULBS	194
2	LICENSE PLATE ILLUMINATION BULBS	194
2	INTERIOR DOME BULB	561
16 5	INSTRUMENT CLUSTER BULBS: -SMALL BULB -LARGE BULB	 37 194

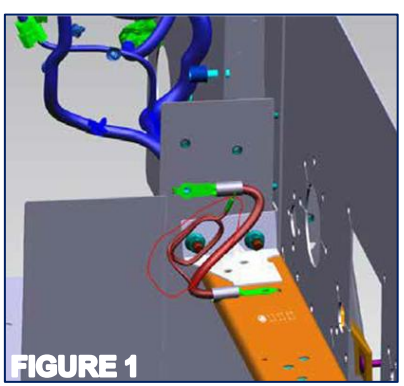


FIGURE 1

(F

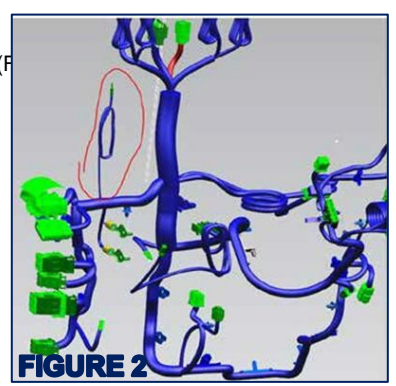


FIGURE 2

F-53 MOTORHOME / F-59 COMM. CHASSIS

BODY AND SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS

LIGHTS CONTROLLED BY HEADLAMP SWITCH

The Headlamp switch on the F-Super Duty Class A Motorhome Chassis (F-53) utilizes FETs in the BCM to control the high and low beam headlamps. (Refer to the lighting-load table for max current.)

NOTE: Do not add marker lamps to the headlamp circuit.

Wiring access for lights to be controlled by the headlamp switch are provided at the front of the dash panel and at the rear of the vehicle. See jumper 14290-A for front lights and jumper 14408-A for rear lights. Splices and electrical loading (fusing and w ire size requirements) of these circuits must be in accordance with general practices previously identified.

LIGHTS CONTROLLED BY STOP LAMP SWITCH &TURN INDICATOR SWITCH

NOTE: Splicing into the stop lamp switch on vehicles is not recommended. A brake lamp feed is available in the 14A318-A Jumper.
If only turn signal function is desired for the added lights, use the lamp circuits available in the 14408-A jumper.

NOTE: Adding more lights than what is specified above can result in reduced life and performance of the flasher.

ADDED LIGHTS OR ACCESSORIES CONTROLLED BY ADDED SWITCHES

State, provincial and local laws may regulate the manner in which the fog and driving lamps are used or may require additional equipment to the particular use intended for the vehicle. It is the buyer's/owner's responsibility to determine the applicability of such laws to the buyer's/owner's intended use for the vehicle and to arrange for the installation of required equipment.
When horns are installed, the location must be as high as possible with bell mouth of horn pointed downward.

WATER MANAGEMENT WINTHIN THE ENGINE COMPARTMENT

In order to protect components within the engine compartment from water intrusion damage to engine components and the vehicle's electrical system, it is necessary that the finished vehicle meet the following performance standard:
When the finished vehicle is parked on a level surface in a heavy rainfall (2.0/min//m°) [0.5G/min/10ft°}, with windshield wipers OFF and HVAC OFF, there shall be no leakage and/or drainage into the engine compartment with the hood/bonnet closed.
The windshield to hood interface should be sealed to prevent water from the windshield from entering the engine compartment.
Splash shields from the frame to body (wheel well) will need to be installed to prevent water from the tires from quenching the exhaust manifolds.

BATTERIES AND VOLTAGE REGULATOR

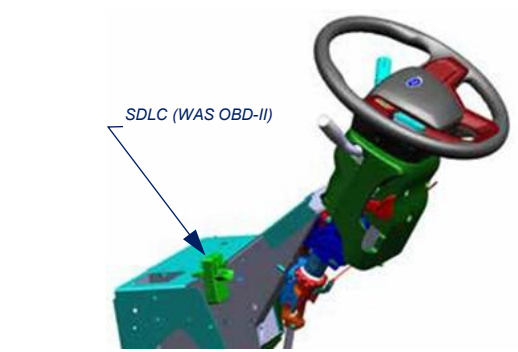
The battery location must be adequately ventilated accessible for servicing, protected from road splash and must also incorporate a shockless mounting.
The coach or chassis battery must not be located under the air cleaner inlet to prevent ingesting any gas that may be emitted from the battery.
Batteries should not be mounted in front of the radiator or impede air flow through the radiator.
If the original equipment battery is replaced by more than one battery,, or a battery of a larger capacity, the battery charging power supply circuit must be checked and revised to carry the additional loads.
The Class A Motorhome Chassis (F-53) has a separate wire to maintain "Keep alive Power"; the addition if a battery cut-off switch must not affect the operation of this circuit.
The electronic voltage regulator base must always be connected to the battery, engine chassis ground when the ignition switch is in either the ON or START position. The voltage regulator will be damaged if the connection does not exist when the ignition switch is energized.

WIPER DELAY MODULE

The wiper delay module on the Motorhome chassis is not internally protected for a continuous high current load greater than 9-amps and must be protected via a properly sized circuit breaker. The existing 30-amp Wiper/Washer Module and Wiper Feed fuse is the fuse panel is sized for the maximum allowable in-rush current and does not provide appropriate protection to the Wiper Delay Module. The Wiper Delay Module must use a relay to control power to the wiper motor.

SDLC DIAGNOSTIC CONNECTOR LOCATION

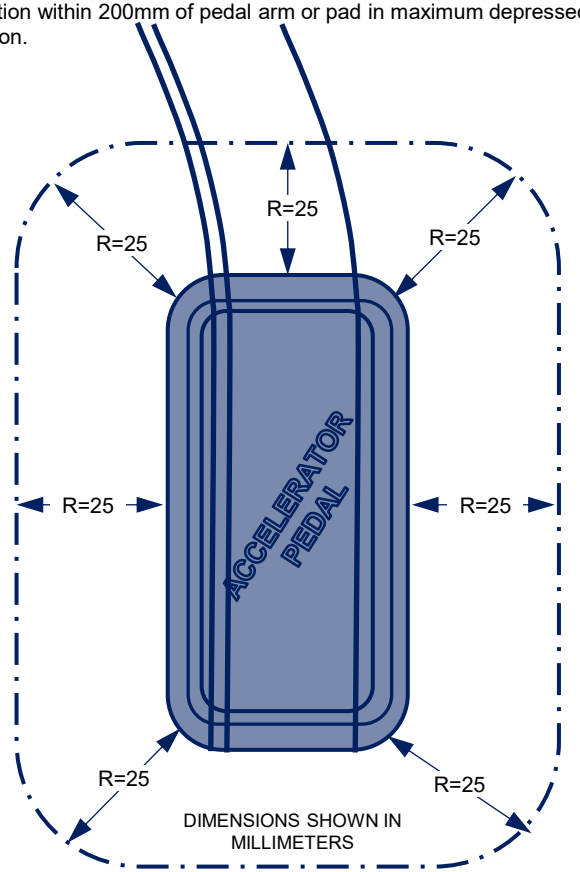
The SDLC (w as OBD-II) diagnostic service port Connector is Attached to the right-hand side of the Steering column Support during chassis assembly. This is intended to be a "Temporary shipping location". It is the responsibility of the body builder to relocate the SDLC diagnostic Connector to the bottom of the dash panel (not supplied By Ford).



ACCELERATOR PEDAL LEVER ARM & PEDAL PAD CLEARANCES

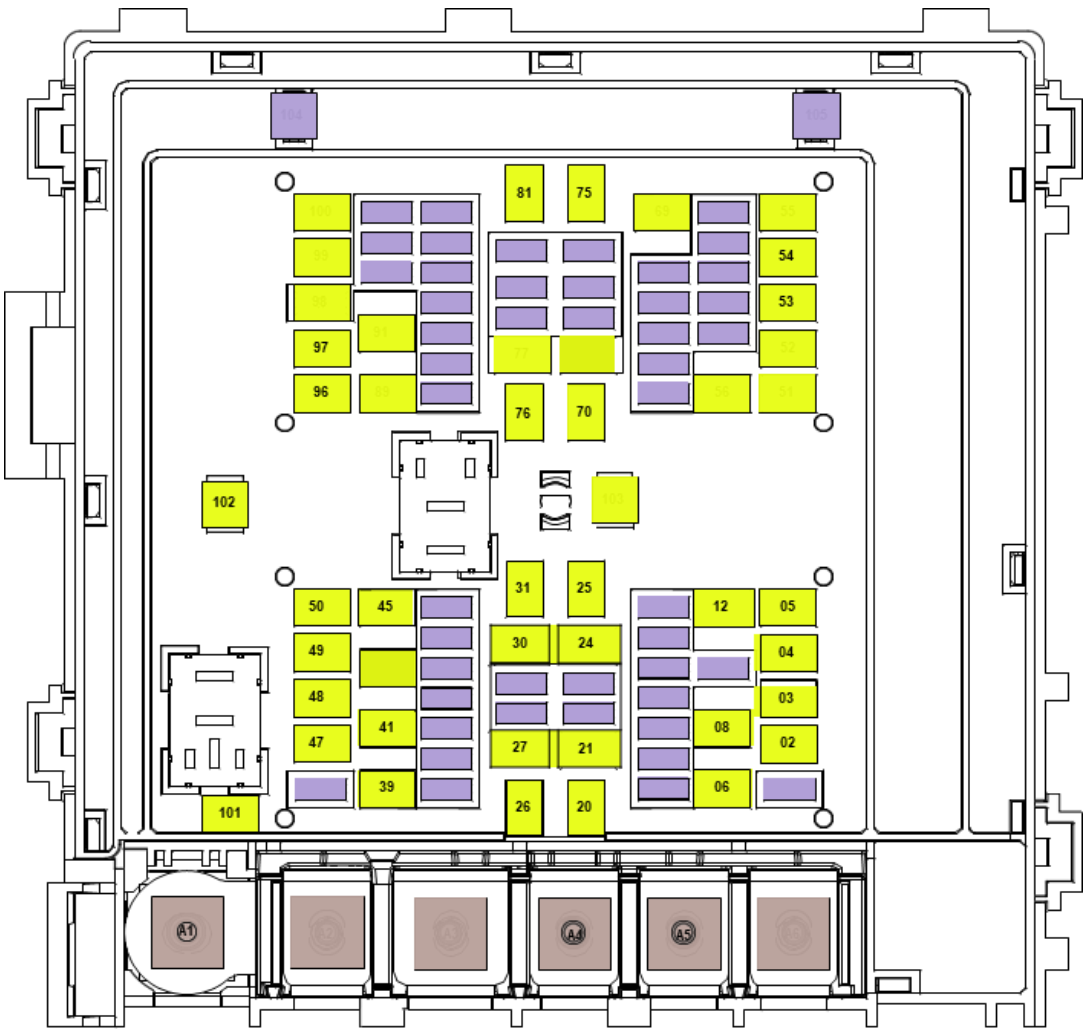
Suspended Pedals: Clearance to the accelerator pedal are (below pedal pivot) and pedal pad throughout their entire range of travel from idle to maximum depressed position and full range of adjustment (if applicable) must meet the following minimum requirements.

PEDAL PAD: 25 or 35mm (/b)
/b: 25mm applies to all components including floor covering and floor mats if floor covering has positive retention to body sheet metal or other rigid components within 200mm of lower accelerator pedal arm or pad in maximum depressed position. 35mm applies to floor covering and floor mats if floor covering does not have positive retention within 200mm of pedal arm or pad in maximum depressed position.



Ford PRO Body Builders Layout Book

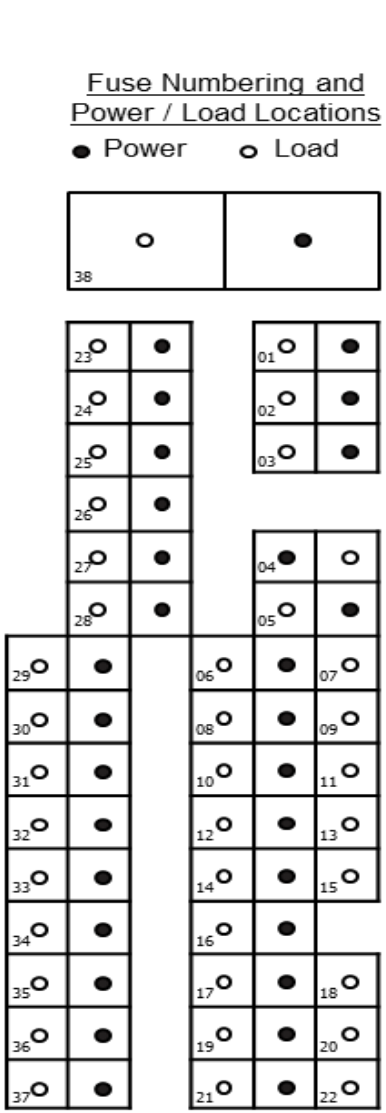
F-53 MOTORHOME / F-59 COMM. CHASSIS
ELECTRICAL: PDB/HCFB FUSE LAYOUT

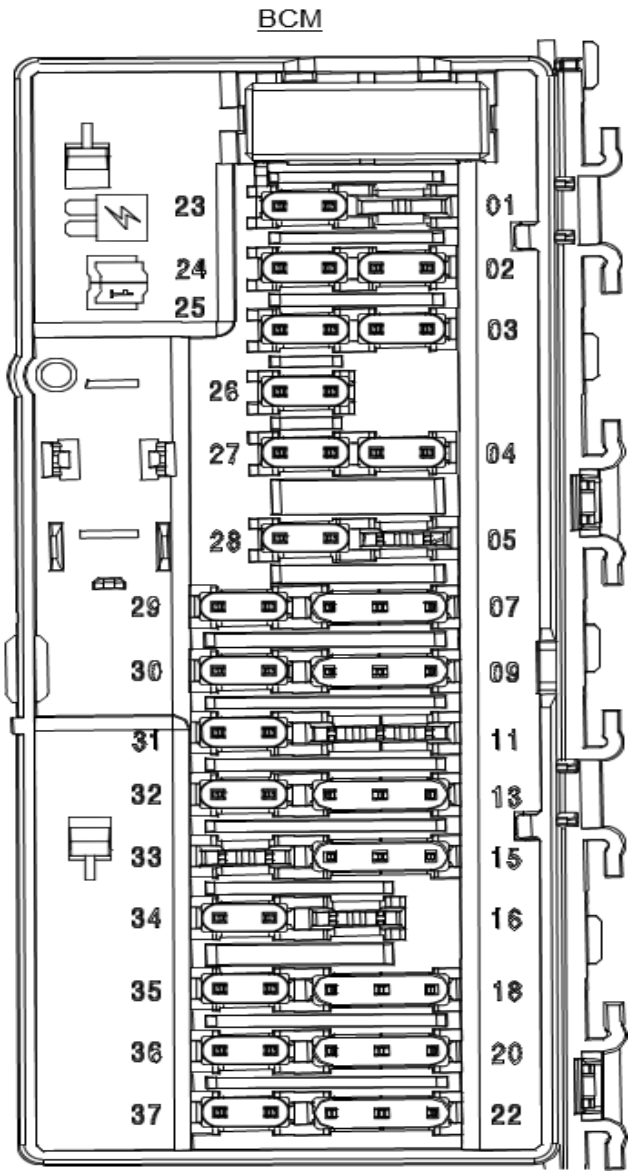


PDB - FUSE NO.	LOAD (AMPS)	USAGE	PDB - FUSE NO.	LOAD (AMPS)	USAGE
Fuse 01	20	HORN	Fuse 56	20	POWER POINT
Fuse 02	50	FRONT BLOWER	Fuse 58	5	USB POWER
Fuse 03		NOT USED	Fuse 59		U-HAUL PARK LAMP 1 (VSO)
Fuse 04	30	STARTER MOTOR RELAY	Fuse 60		NOT USED
Fuse 05		NOT USED	Fuse 61		NOT USED
Fuse 06		NOT USED	Fuse 62		NOT USED
Fuse 07		NOT USED	Fuse 63		NOT USED
Fuse 08		NOT USED	Fuse 64		NOT USED
Fuse 09		NOT USED	Fuse 65		NOT USED
Fuse 10		NOT USED	Fuse 66		NOT USED
Fuse 12		NOT USED	Fuse 67	10	BRAKE ON/OFF ISOLATION RELAY
Fuse 13	10	R/S FEED CLIMATE CONTROLS CLIMATE CONTROL BLOWER MOTOR RELAY	Fuse 69		NOT USED
Fuse 14	10	ADAPTIVE CRUISE CONTROL RELAY	Fuse 70		NOT USED
Fuse 15		NOT USED	Fuse 71	30	ABS VALVES
Fuse 16		NOT USED	Fuse 72	10	(SPARE)
Fuse 17	10	PCM R/S FEED	Fuse 73		NOT USED
Fuse 18	10	R/S FEED TO ABS	Fuse 74		NOT USED
Fuse 19		NOT USED	Fuse 75		NOT USED
Fuse 20	40	WIPER POWER	Fuse 76	60	B+ TO BCM
Fuse 21		NOT USED	Fuse 77	30	VQM PWR (B+) TO BCM
Fuse 22	10	WIPER MODULE	Fuse 78	10	TRAILER TOW STOP LAMPS
Fuse 23		NOT USED	Fuse 79	5	HYDROMAX PUMP MONITOR
Fuse 24	40	BCM - BATTERY POWER IN FEED 2	Fuse 80	10	TRAILER TOW BACKUP LAMPS
Fuse 25	50	BCM - BATTERY POWER IN FEED 1	Fuse 81		NOT USED
Fuse 26		NOT USED	Fuse 82		NOT USED
Fuse 27	20	B+ TO BODY BUILDER CONNECTOR	Fuse 83		NOT USED
Fuse 28		NOT USED	Fuse 84		NOT USED
Fuse 29	10	NOT USED	Fuse 85		NOT USED
Fuse 30		NOT USED	Fuse 86		NOT USED
Fuse 31	60	HYDROMAX PUMP RELAY	Fuse 87		NOT USED
Fuse 32 (VPWR1)	20	VEHICLE POWER 1	Fuse 88		NOT USED
Fuse 33 (VPWR2)	20	VEHICLE POWER 2	Fuse 89		NOT USED
Fuse 34 (VPWR3)	10	VEHICLE POWER 3	Fuse 90		NOT USED
Fuse 35 (VPWR4)	20	VEHICLE POWER 4	Fuse 91	40	B+ TO BODY BUILDER CONNECTOR
Fuse 36		NOT USED	Fuse 93		NOT USED
Fuse 37		NOT USED	Fuse 94		NOT USED
Fuse 38	10	WIPER WASHER	Fuse 95	20	STOP LAMP OFF RELAY - TRAILER BRAKE CONTROLLER
Fuse 39		NOT USED	Fuse 96		NOT USED
Fuse 41	30	TRAILER BRAKE CTRL MODE	Fuse 97	50	(SPARE)
Fuse 43	30	B+ TO BODY BUILDER CONNECTOR	Fuse 98	30	TRAILER TOW BATTERY CHARGE
Fuse 45		NOT USED	Fuse 99	40	BODY BUILDER RUN/STARTER RELAY FEED
Fuse 46	10	A/C CLUTCH	Fuse 100		NOT USED
Fuse 47		NOT USED	Fuse 101		NOT USED
Fuse 48	20	R/A TO BODY BUILDER CONNECTOR	Fuse 102		NOT USED
Fuse 49	30	PUMP ELECTRONICS MODULE	Fuse 103		NOT USED
Fuse 50	15	INJECTOR	Fuse 104		NOT USED
Fuse 51	20	POWER POINT	Fuse 105	15	TRAILER TOW RH/LH STOP/TURE RELAY POWER
Fuse 52		NOT USED	HCFB - PDB		
Fuse 53	30	TRAILER TOW PARK LAMPS	Fuse A3	300	ALTERNATOR 1
Fuse 54		NOT USED	Fuse A4	60	ABS PUMP
Fuse 55		NOT USED	A1		BATTERY

F-53 MOTORHOME / F-59 COMM. CHASSIS

ELECTRICAL: BCM FUSE LAYOUT

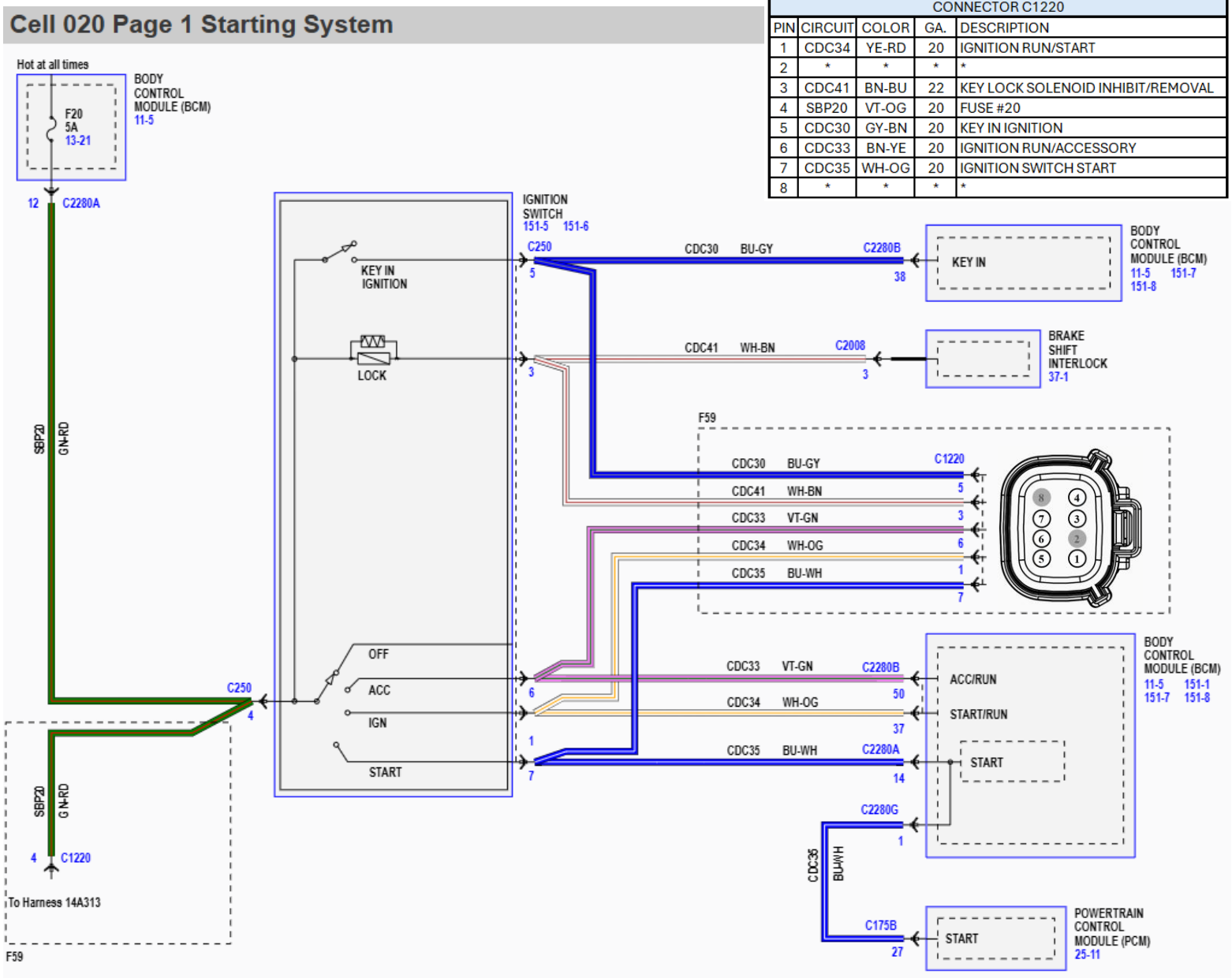




PDB - FUSE NO.	LOAD (AMPS)	USAGE
Fuse 01		NOT USED
Fuse 02	10	R/A RADIO FEED TO BODY BUILDER
Fuse 03		NOT USED
Fuse 04	20	B+ FEED TO BODY BUILDER CONNECTOR
Fuse 05		NOT USED
Fuse 06	10	(SPARE)
Fuse 07	10	SDLC
Fuse 08		NOT USED
Fuse 09		NOT USED
Fuse 10		NOT USED
Fuse 12	7.5	BOO SWITCH / BOO-TRAILER BRAKE CONNECTOR
Fuse 13	7.5	SDLC
Fuse 14	15	(SPARE)
Fuse 15	15	(SPARE)
Fuse 16		NOT USED
Fuse 17	7.5	(SPARE)
Fuse 18	7.5	YAW SENSOR
Fuse 19	5	TELEMATICS CONTROL UNIT
Fuse 20	5	IGNITION SWITCH
Fuse 21	5	NOT USED
Fuse 22	5	(SPARE)
Fuse 23	30	(SPARE)
Fuse 24	30	(SPARE)
Fuse 25	20	(SPARE)
Fuse 26	30	(SPARE)
Fuse 27	30	(SPARE)
Fuse 28	30	(SPARE)
Fuse 29	15	(SPARE)
Fuse 30	5	BRAKE ON-OFF ISOLATION RELAY TO HYDROMAX RELAY AND HYDROMAX MONITOR
Fuse 31	10	CLUSTER/SCCM
Fuse 32	20	(SPARE)
Fuse 33		NOT USED
Fuse 34	30	(SPARE)
Fuse 35	5	TOW HAULS SWITCH
Fuse 36	15	CAMERA LANE DEPARTURE WARNING
Fuse 37	20	R/S TO BODY BUILDER CONNECTOR
Fuse 38	30	(SPARE)

F-53 MOTORHOME / F-59 COMM. CHASSIS

STARTING SYSTEM

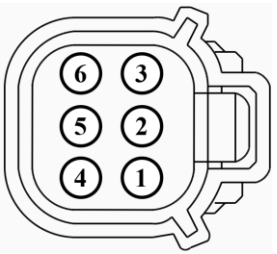


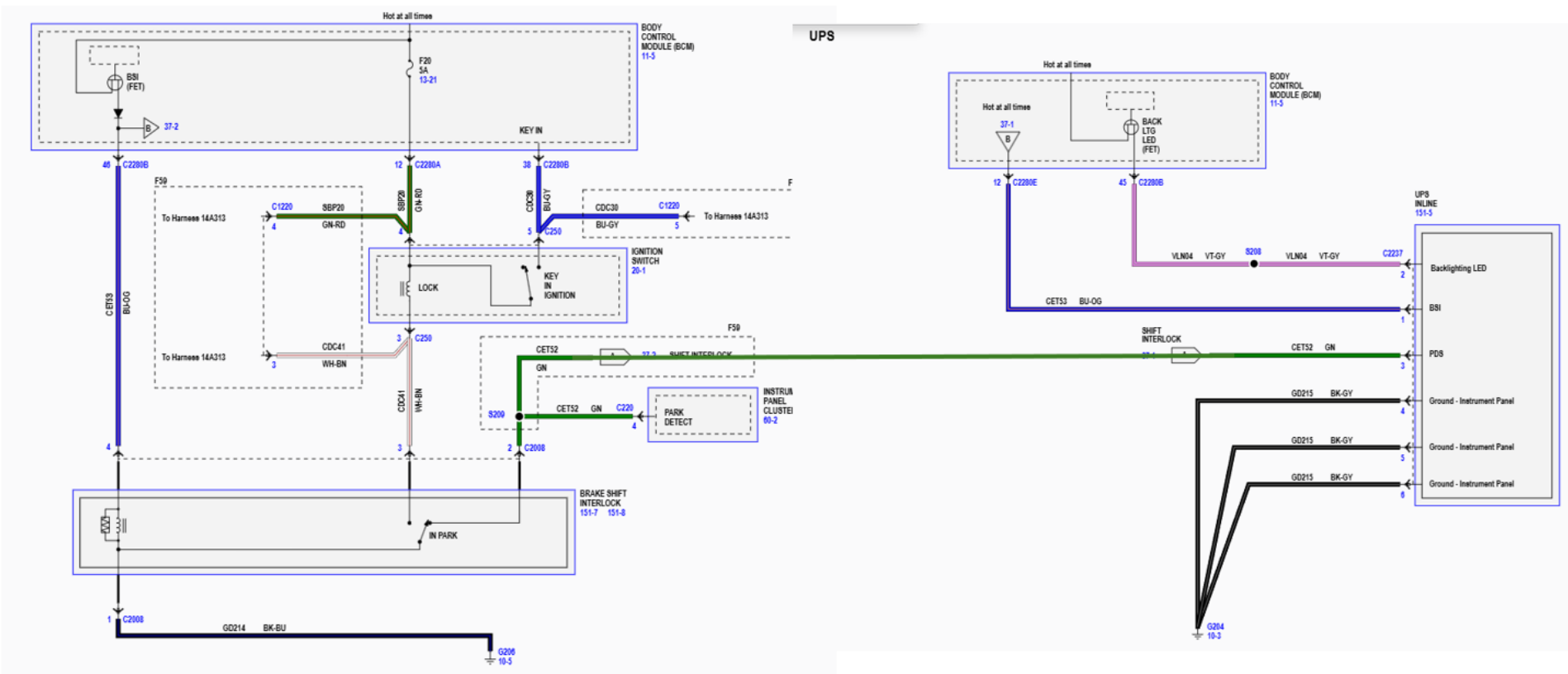
CONNECTOR C1220				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CDC34	YE-RD	20	IGNITION RUN/START
2	*	*	*	*
3	CDC41	BN-BU	22	KEY LOCK SOLENOID INHIBIT/REMOVAL
4	SBP20	VT-OG	20	FUSE #20
5	CDC30	GY-BN	20	KEY IN IGNITION
6	CDC33	BN-YE	20	IGNITION RUN/ACCESSORY
7	CDC35	WH-OG	20	IGNITION SWITCH START
8	*	*	*	*

F-53 MOTORHOME / F-59 COMM. CHASSIS
SHIFT INTERLOCK

CONNECTOR C1220				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CDC34	YE-RD	20	IGNITION RUN/START
2	*	*	*	*
3	CDC41	BN-BU	22	KEY LOCK SOLENOID INHIBIT/REMOVAL
4	SBP20	VT-OG	20	FUSE #20
5	CDC30	GY-BN	20	KEY IN IGNITION
6	CDC33	BN-YE	20	IGNITION RUN/ACCESSORY
7	CDC35	WH-OG	20	IGNITION SWITCH START
8	*	*	*	*

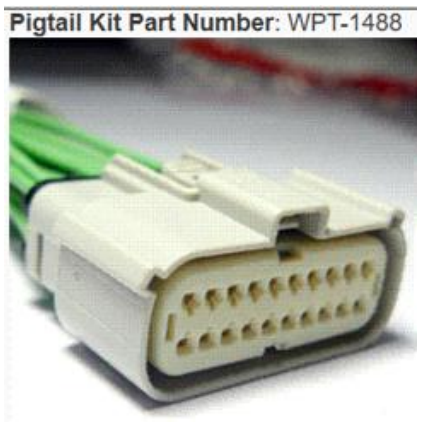
CONNECTOR C2237				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CET53	BU-OG	18	BRAKE SHIFT INTERLOCK
2	VLNO4	VT-GY	20	I/P SWITCH ILLUMINATION
3	CET52	GN	20	SW. TRANSMISSION PARK DETECT
4	GD215	BK-GY	20	I/P GROUND POINT #2
5	GD215	BK-GY	18	I/P GROUND POINT #2
6	GD215	BK-GY	18	I/P GROUND POINT #2





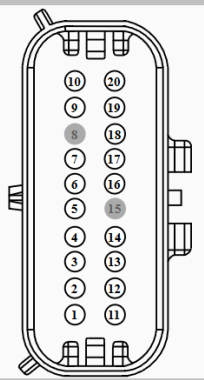
F-53 MOTORHOME / F-59 COMM. CHASSIS

HORN – CIGAR LIGHTER

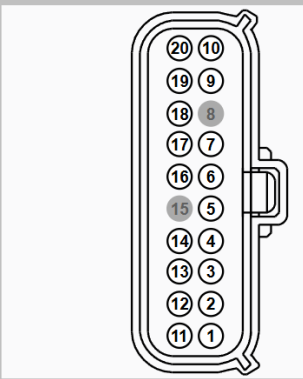


Inline:	Description	Color	Harness	Base Part #	Service Pigtail
C211	INLINE	LT GY	14A318 14401		See Below

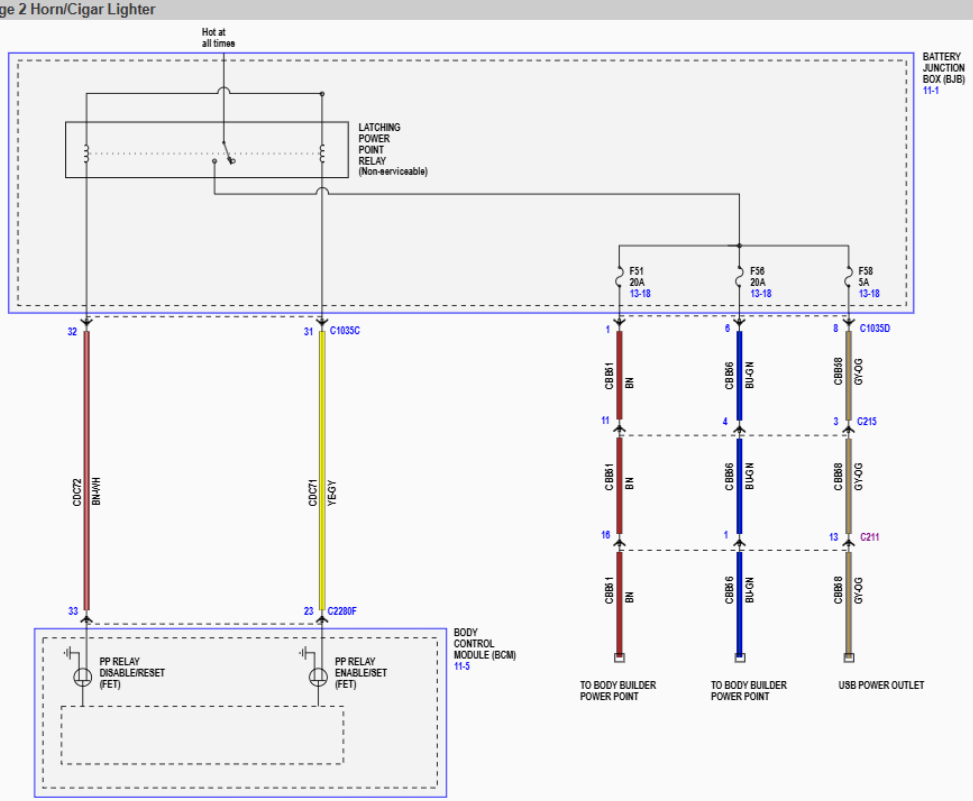
MALE
Harness 14A318



FEMALE
Harness 14401



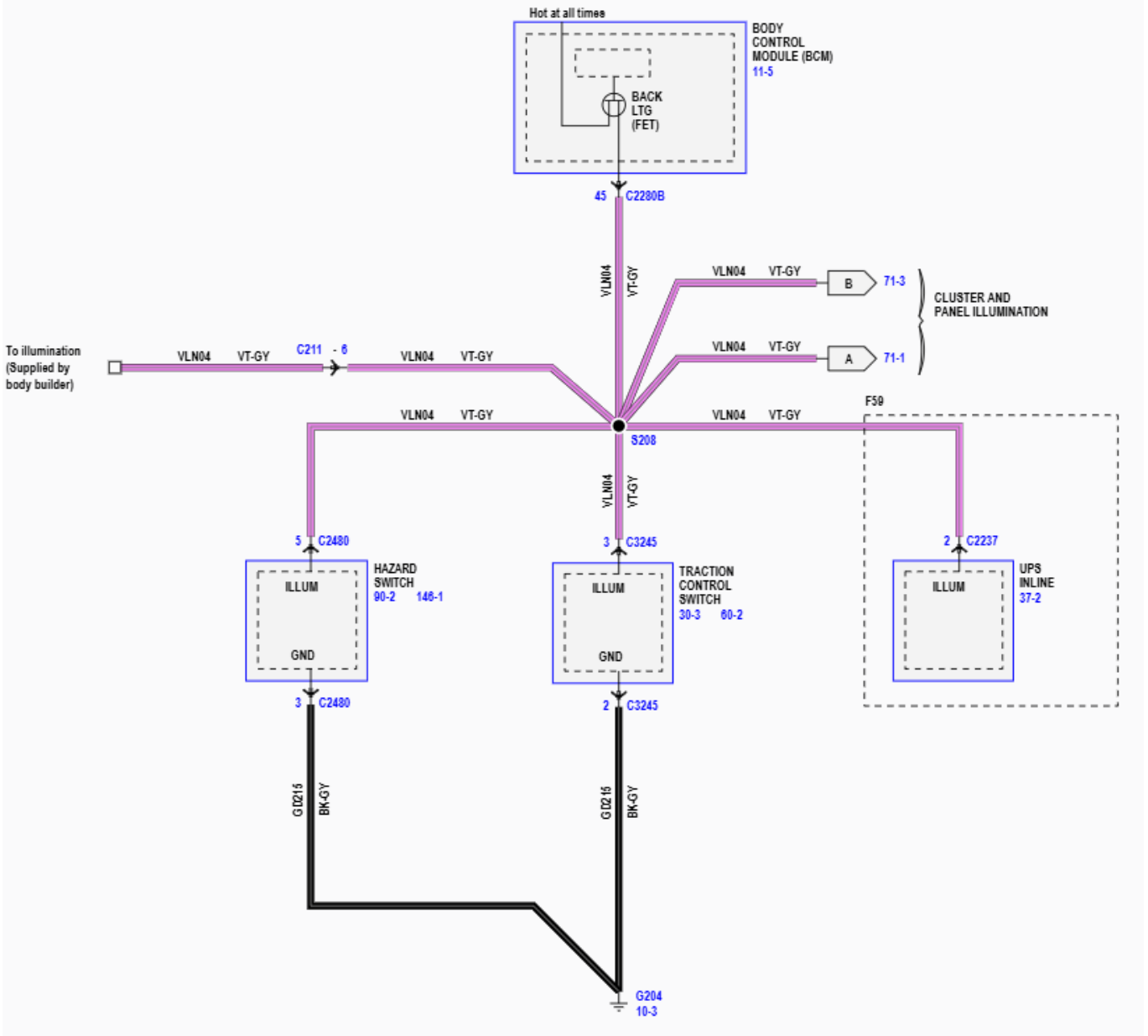
Cell 044 Page 2 Horn/Cigar Lighter

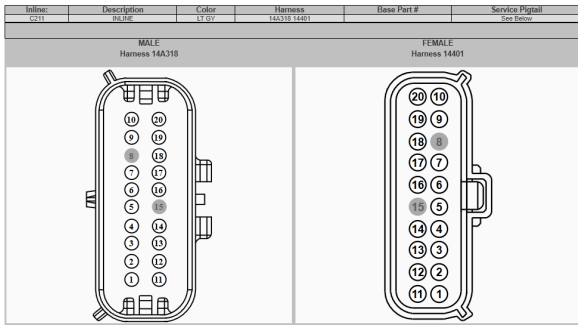


CONNECTOR C211				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CBB56	BU-GN	16	FUSE #56
2	CLS10	GN-BN	16	REVERSE LEFT OR COMMON
3	CLN09	YE-GN	18	BATT. SAVER/EG SW. OFF IN.T LMPS.
4	CLS53	GY-VT	18	STOP/TURN RIGHT OUTBOARD
5	SBP04	GN-RD	16	FUSE #4
6	VLN04	VT-GY	20	IP SWITCH ILL/DIMMING
7	SBP37	GY-RD	16	FUSE #37
8	*	*	*	*
9	CLN67	VT-GN	18	INT. COURTESY LAMP DIMMING
10	CLS17	YE-GY	18	HIGH MOUNT STOP LIGHT
11	CLS05	BU-GY	18	PARK LAMPS
12	CLS27	GN-OG	18	TURN LAMP RIGHT REAR
13	CBB58	GY-OG	20	FUSE #58
14	SBP23	WH-RD	18	FUSE #23
15	*	*	*	*
16	CBB51	BN	16	FUSE #51
17	CLS51	WH-GN	18	STOP/TURN LEFT OUTBOARD
18	CPL26	GN-VT	20	LATCH DRVR OR LEFT FR.T DR AJAR
19	CLS23	GY-OG	18	TURN LAMP LEFT REAR
20	CMC25	WH-VT	18	PARKING BRAKE

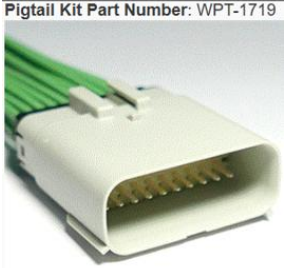
F-53 MOTORHOME / F-59 COMM. CHASSIS
CLUSTER & PANEL ILLUMINATION

Cell 071 Page 2 Cluster and Panel Illumination

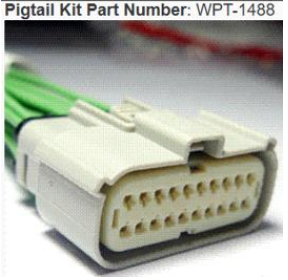




Pigtail Kit Part Number: WPT-1719

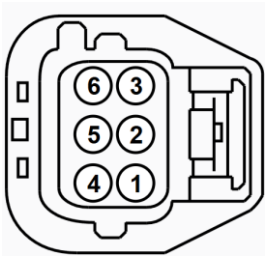


Pigtail Kit Part Number: WPT-1488



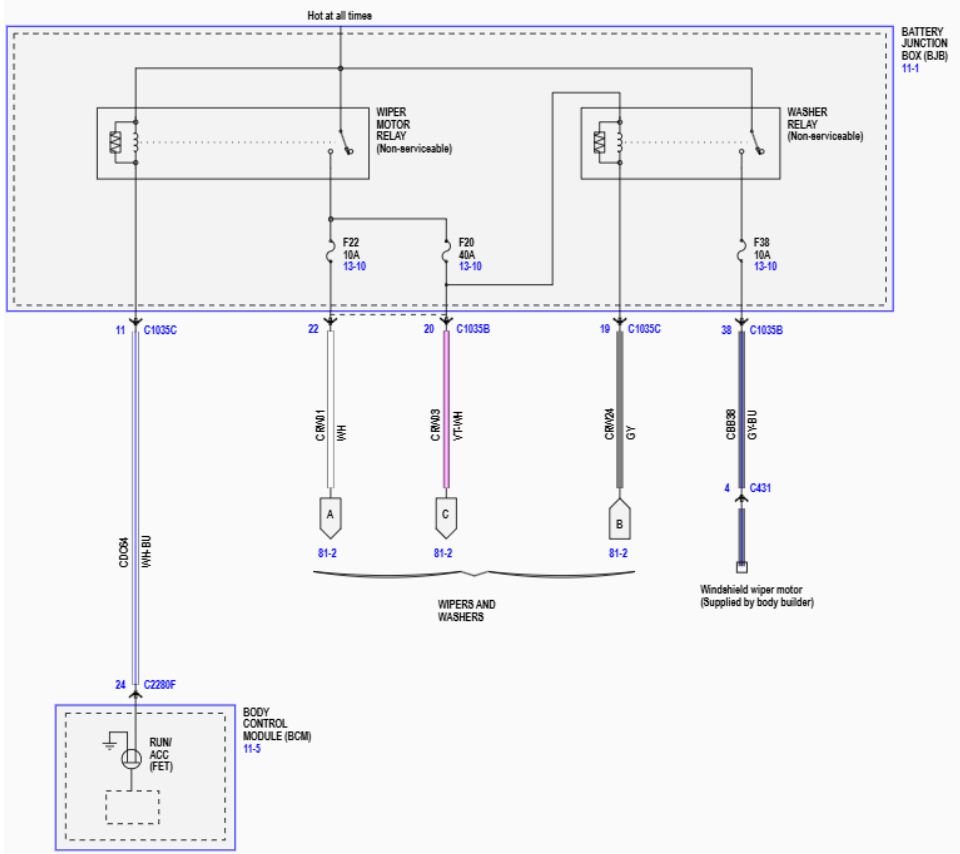
CONNECTOR C211				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CBB56	BU-GN	16	FUSE #56
2	CLS10	GN-BN	16	REVERSE LEFT OR COMMON
3	CLN09	YE-GN	18	BATT. SAVER/EG SW. OFF IN.T LMPS.
4	CLS53	GY-VT	18	STOP/TURN RIGHT OUTBOARD
5	SBP04	GN-RD	16	FUSE #4
6	VLN04	VT-GY	20	IP SWITCH ILL/DIMMING
7	SBP37	GY-RD	16	FUSE #37
8	*	*	*	*
9	CLN67	VT-GN	18	INT. COURTESY LAMP DIMMING
10	CLS17	YE-GY	18	HIGH MOUNT STOP LIGHT
11	CLS05	BU-GY	18	PARK LAMPS
12	CLS27	GN-OG	18	TURN LAMP RIGHT REAR
13	CBB58	GY-OG	20	FUSE #58
14	SBP23	WH-RD	18	FUSE #23
15	*	*	*	*
16	CBB51	BN	16	FUSE #51
17	CLS51	WH-GN	18	STOP/TURN LEFT OUTBOARD
18	CPL26	GN-VT	20	LATCH DRVR OR LEFT FR.T DR AJAR
19	CLS23	GY-OG	18	TURN LAMP LEFT REAR
20	CMC25	WH-VT	18	PARKING BRAKE

F-53 MOTORHOME / F-59 COMM. CHASSIS
WINDSHIELD WIPER AND WASHERS

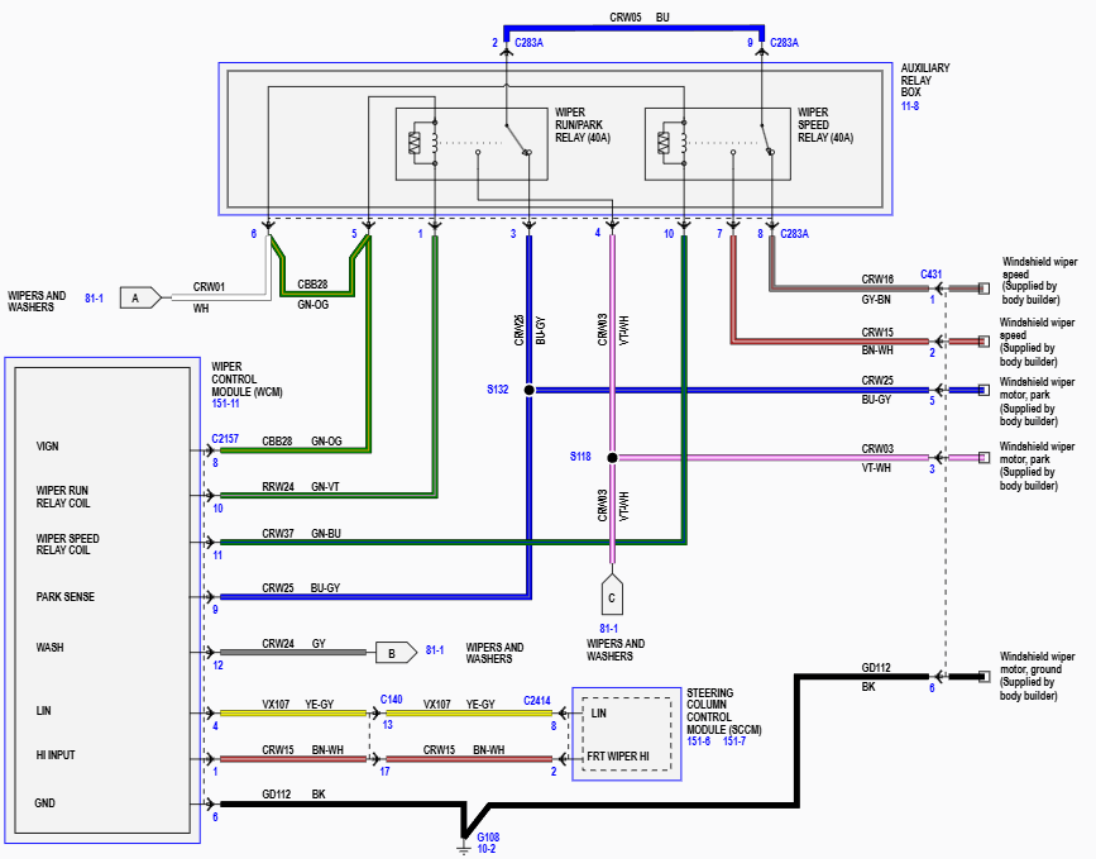


CONNECTOR C431				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CRW16	GY-BN	10	FRONT WIPER -LOW
2	CRW15	BN-WH	10	FRONT WIPER -HIGH
3	CRW03	VT-WH	10	FRONT WIPER -RELAY
4	CBB38	GY-BU	10	FUSE #38
5	CRW25	BU-GY	10	FRONT WIPER -PARK
6	GD112	BK	10	LEFT COWL GROUND

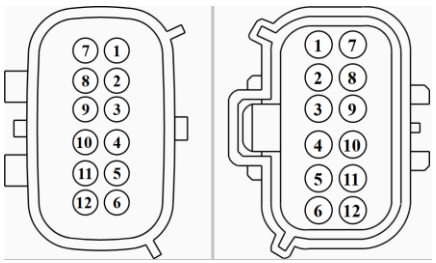
Cell 81 Page 1

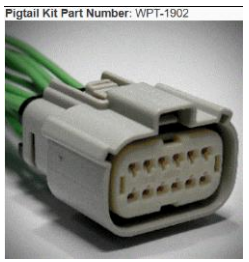


Cell 81 Page 2



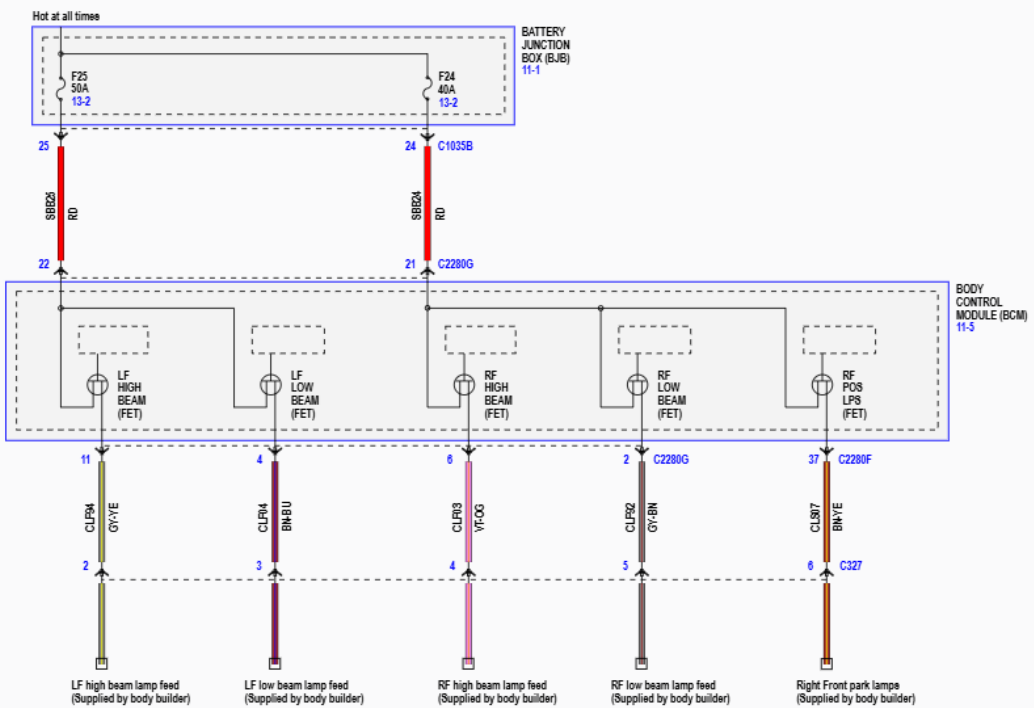
F-53 MOTORHOME / F-59 COMM. CHASSIS
HEADLAMPS/AUTOLAMPS



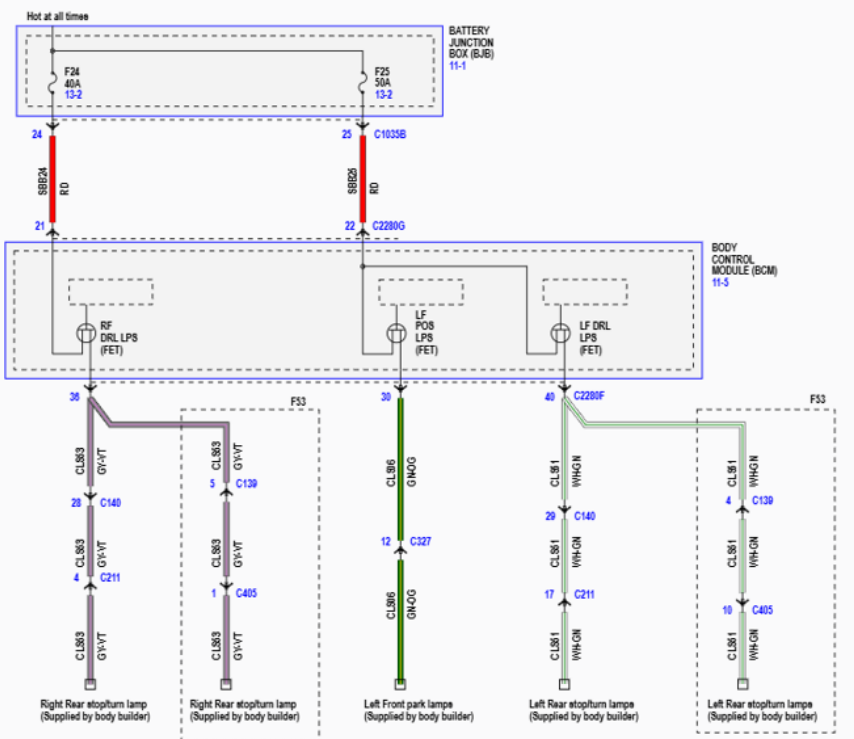


CONNECTOR C327				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CRH01	YE-RD	16	HORN RELAY
2	CLF94	GY-YE	20	REVERSE LEFT OR COMMON
3	CLF04	BN-BU	20	LEFT LOW BEAM
4	CLF03	VT-OG	20	RIGHT HIGH BEAM
5	CLF92	GY-BN	20	FUSE #4
6	CLS07	BN-YE	18	RIGHT FRONT/ REAR PARK LAMPS
7	CAC11	WH-OG	16	CUST. ACCESS CKT. #3
8	CAC12	GY-OG	16	CUST. ACCESS CKT. #4
9	CAC18	YE-GY	20	CUST. ACCESS CKT. #6
10	CLS21	BU-GN	18	LEFT FRONT TURN LAMP
11	CLS25	YE-VT	18	RIGHT FRONT TURN LAMP
12	CLS06	GN-OG	18	LEFTT FRONT/ REAR PARK LAMPS

Cell 085 Page 3 Headlamps/Autolamps



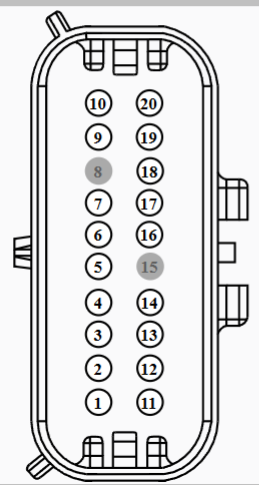
Cell 085 Page 4 Headlamps/Autolamps



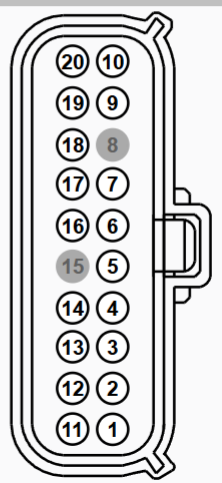
F-53 MOTORHOME / F-59 COMM. CHASSIS
HEADLAMPS/AUTOLAMPS

Inline:	Description	Color	Harness	Base Part #	Service Pigtail
C211	INLINE	LT GY	14A318 14401		See Below

MALE
Harness 14A318

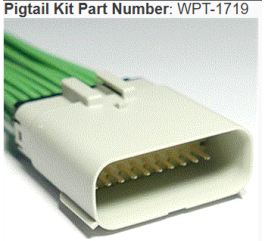


FEMALE
Harness 14401

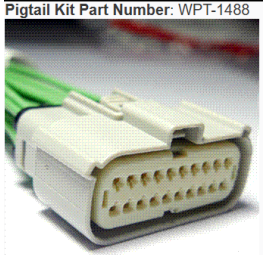


Connector C211				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CBB56	BU-GN	16	FUSE #56
2	CLS10	GN-BN	16	REVERSE LEFT OR COMMON
3	CLN09	YE-GN	18	BATT. SAVER/EG SW. OFF IN.T LMPS.
4	CLS53	GY-VT	18	STOP/TURN RIGHT OUTBOARD
5	SBP04	GN-RD	16	FUSE #4
6	VLN04	VT-GY	20	IP SWITCH ILL/DIMMING
7	SBP37	GY-RD	16	FUSE #37
8	*	*	*	*
9	CLN67	VT-GN	18	INT. COURTESY LAMP DIMMING
10	CLS17	YE-GY	18	HIGH MOUNT STOP LIGHT
11	CLS05	BU-GY	18	PARK LAMPS
12	CLS27	GN-OG	18	TURN LAMP RIGHT REAR
13	CBB58	GY-OG	20	FUSE #58
14	SBP23	WH-RD	18	FUSE #23
15	*	*	*	*
16	CBB51	BN	16	FUSE #51
17	CLS51	WH-GN	18	STOP/TURN LEFT OUTBOARD
18	CPL26	GN-VT	20	LATCH DRVR OR LEFT FR.T DR AJAR
19	CLS23	GY-OG	18	TURN LAMP LEFT REAR
20	CMC25	WH-VT	18	PARKING BRAKE

Pigtail Kit Part Number: WPT-1719

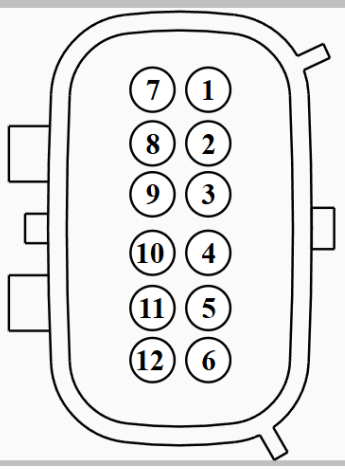


Pigtail Kit Part Number: WPT-1488

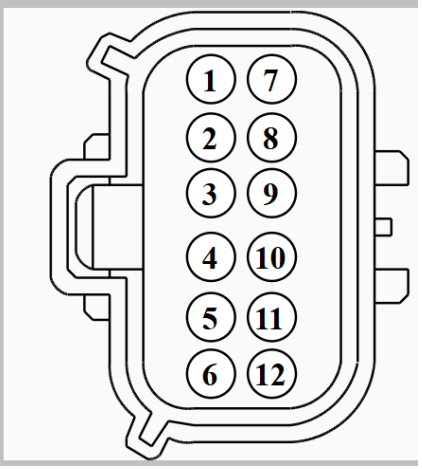


Inline:	Description	Color	Harness	Base Part #	Service Pigtail
C327	INLINE	GY	14290 12A581		See Below

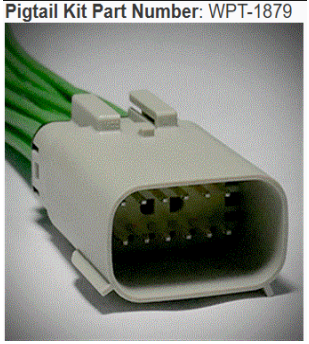
MALE
Harness 14290



FEMALE
Harness 12A581



Pigtail Kit Part Number: WPT-1879



Pigtail Kit Part Number: WPT-1902

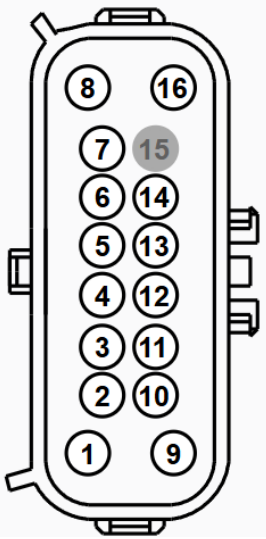
Connector C327				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CRH01	YE-RD	16	HORN RELAY
2	CLF94	GY-YE	20	REVERSE LEFT OR COMMON
3	CLF04	BN-BU	20	LEFT LOW BEAM
4	CLF03	VT-OG	20	RIGHT HIGH BEAM
5	CLF92	GY-BN	20	FUSE #4
6	CLS07	BN-YE	18	RIGHT FRONT/ REAR PARK LAMPS
7	CAC11	WH-OG	16	CUST. ACCESS CKT. #3
8	CAC12	GY-OG	16	CUST. ACCESS CKT. #4
9	CAC18	YE-GY	20	CUST. ACCESS CKT. #6
10	CLS21	BU-GN	18	LEFT FRONT TURN LAMP
11	CLS25	YE-VT	18	RIGHT FRONT TURN LAMP
12	CLS06	GN-OG	18	LEFTT FRONT/ REAR PARK LAMPS

F-53 MOTORHOME / F-59 COMM. CHASSIS

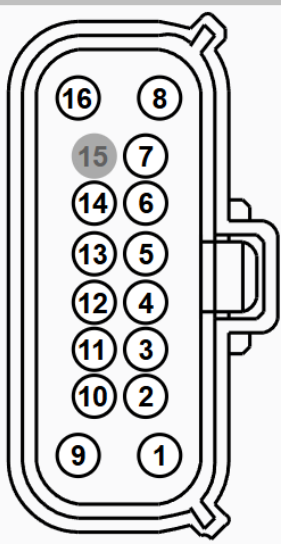
PARK LAMPS- ENGINE

Inline:	Description	Color	Harness	Base Part #	Servic
C405	INLINE	GY	14405 14408		See

MALE
Harness 14405



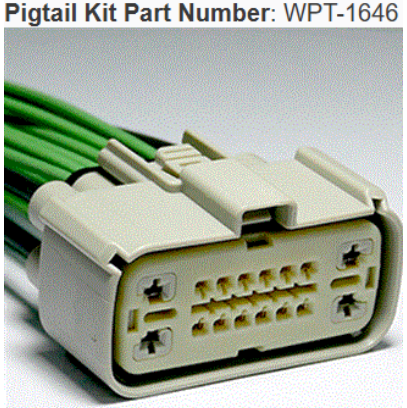
FEMALE
Harness 14408



CONNECTOR C405				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CLS53	GY-VT	18	STOP/TURN RIGHT OUTBOARD
2	CAT06	YE	16	TRAILER TOW LEFT TURN SIGNAL
3	CLS10	GN-BN	16	REVERSE LEFT OR COMMON
4	CAT03	GY-BN	18	TRAILER TOW BACKUP LAMPS
5	CAT09	GN	16	TRAILER TOW RIGHT TURN SIGNAL
6	CLN67	VT-GN	18	INTERIOR COURTESY LAMP DIMMING
7	CBB95	BN-BU	16	FUSE 95 (STOP LAMP RELAY OUTPUT)
8	CAT17	BN	16	TRAILER TOW PARK LAMPS
9	CET19	BU	10	SOLENOID SHIFT CONTROL #2 LOW SIDE
10	CLS51	WH-GN	18	STOP/TURN LEFT OUTBOARD
11	CLS05	BU-GY	16	PARK LAMPS
12	CLS19	VT-OG	16	STOP/TURN RIGHT INBOARD
13	CLS17	YE-GY	16	HIGH MOUNT STOP LIGHT
14	CLS18	GY-BN	16	STOP/TURN LEFT INBOARD
15	*	*		*
16	GD410	BK-GN	10	GROUND (RIGHT REAR FRAME)

Pigtail Kit Part Number: WPT-1577

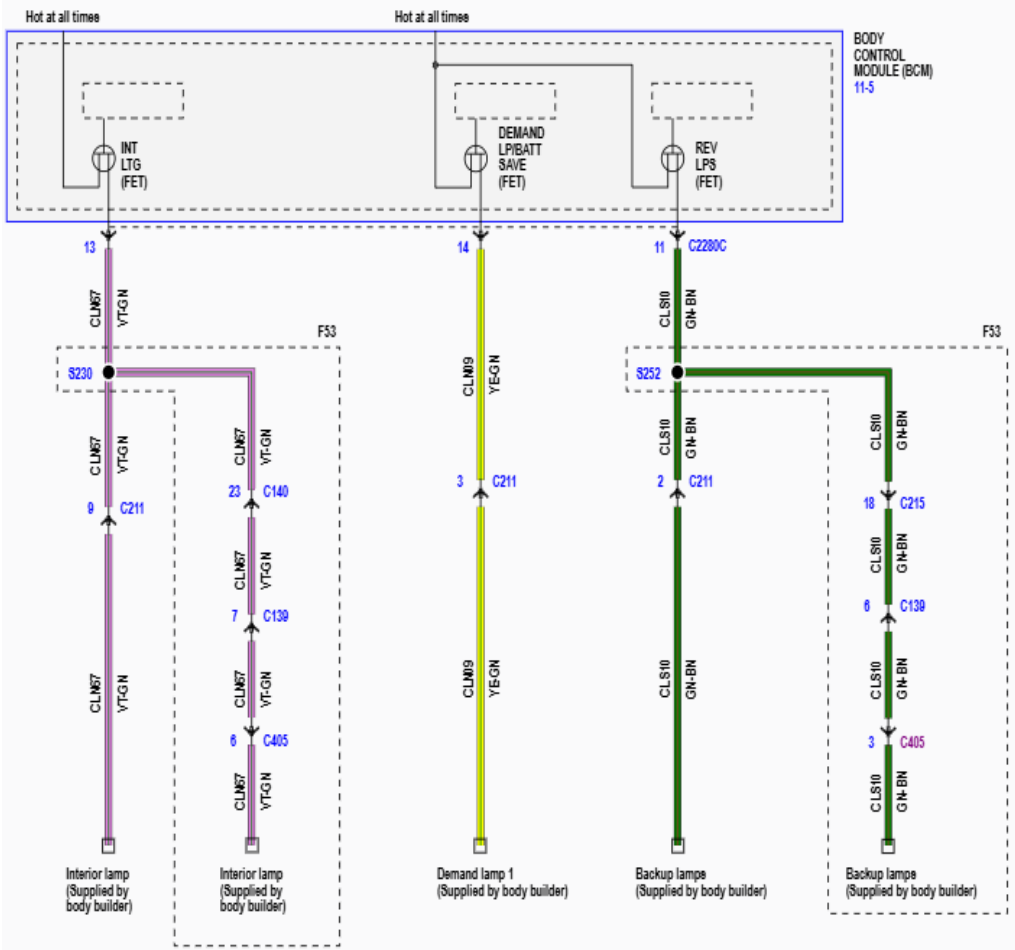
Pigtail Kit Part Number: WPT-1646



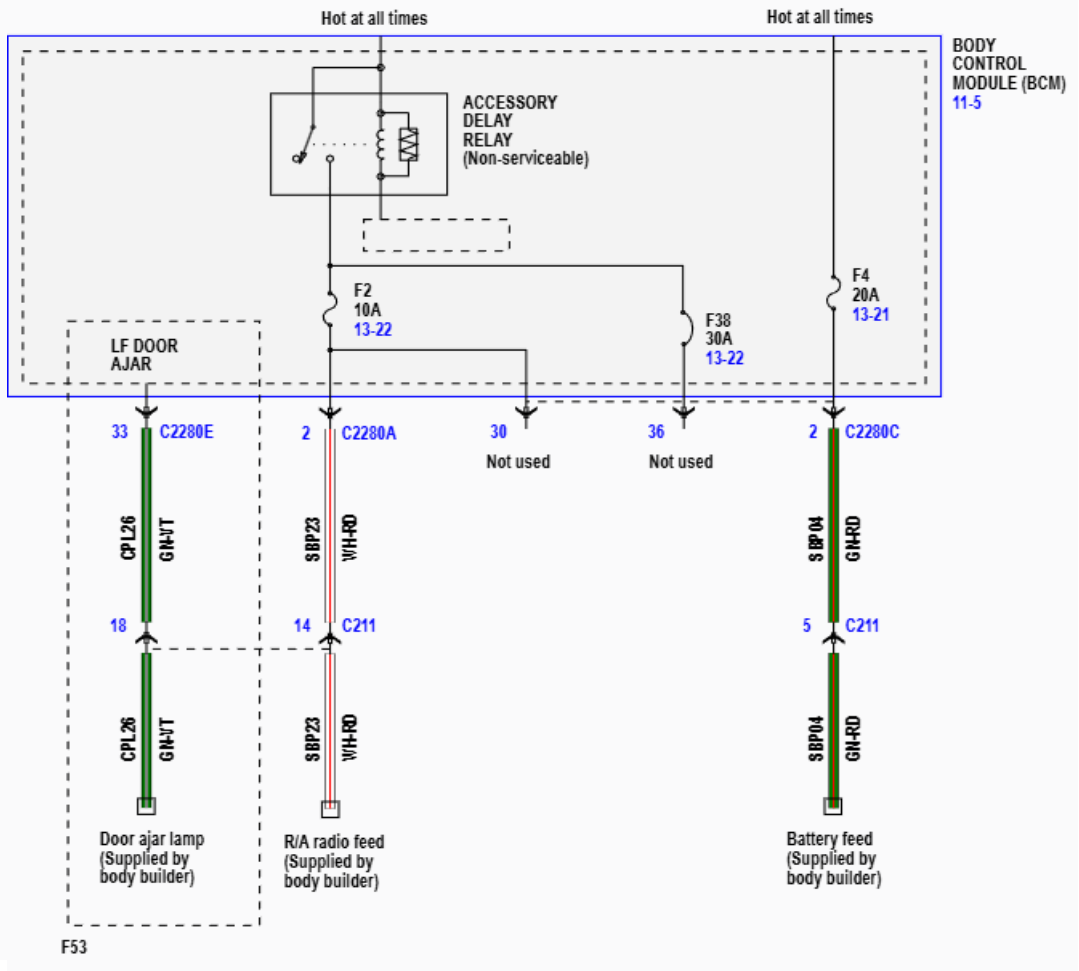
F-53 MOTORHOME / F-59 COMM. CHASSIS

INTERIOR LAMPS

Cell 089 Page 1 Interior Lamps



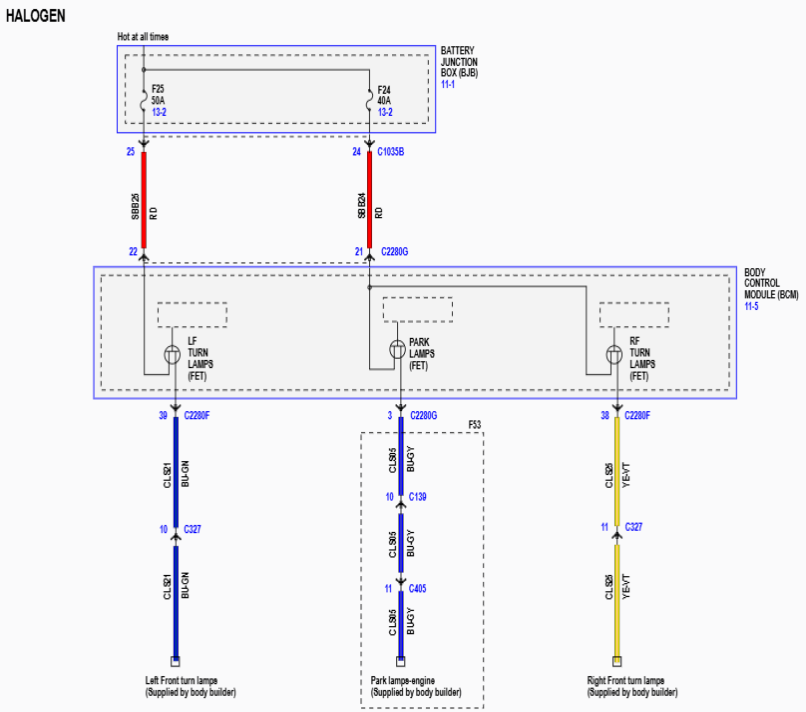
Cell 089 Page 2 Interior Lamps



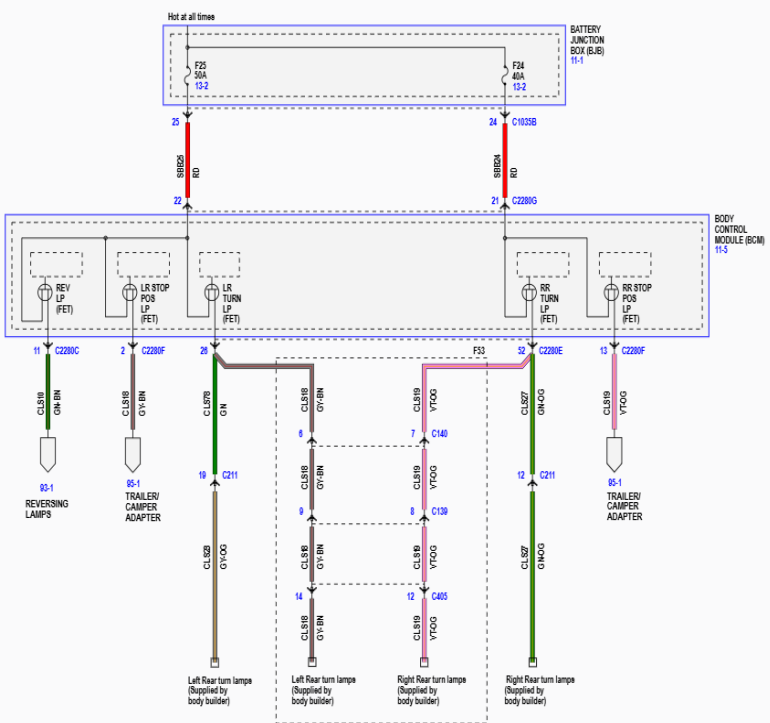
F-53 MOTORHOME / F-59 COMM. CHASSIS

TURN SIGNAL, STOP/HAZARD LAMPS

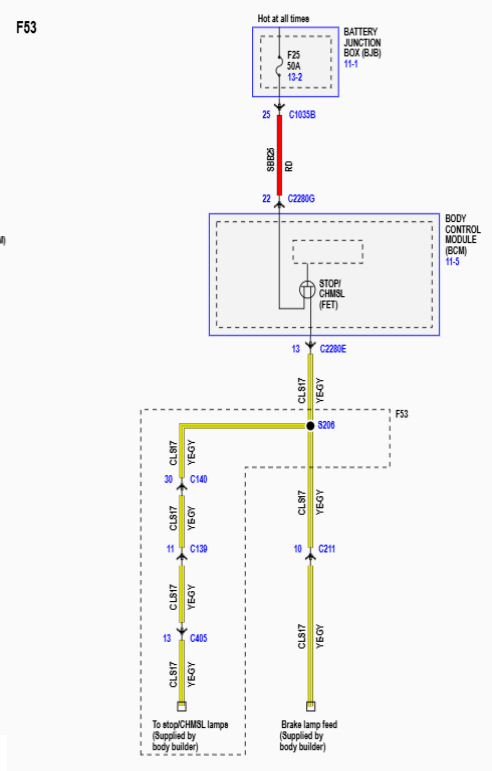
Cell 090 Page 4 Turn Signal/Stop/Hazard Lamps



Cell 090 Page 5 Turn Signal/Stop/Hazard Lamps



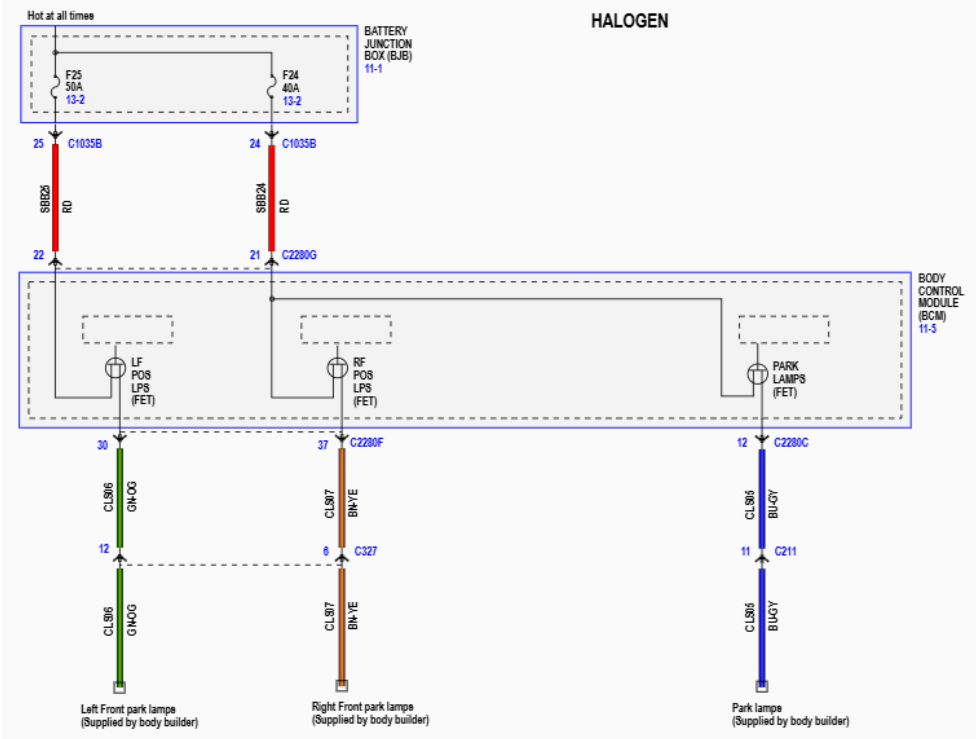
Cell 090 Page 6 Turn Signal/Stop/Hazard Lamps



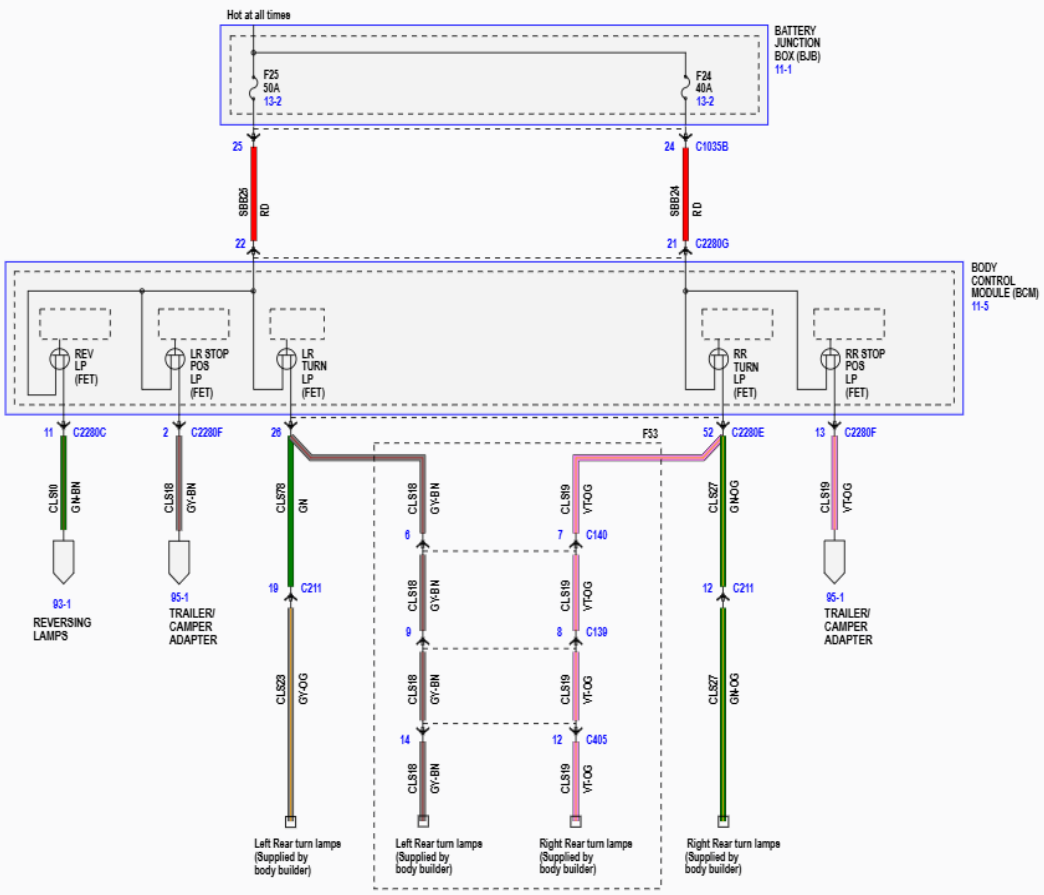
F-53 MOTORHOME / F-59 COMM. CHASSIS

PARKING, REAR AND LICENSE LAMPS

Cell 092 Page 2 Parking, Rear and License Lamps



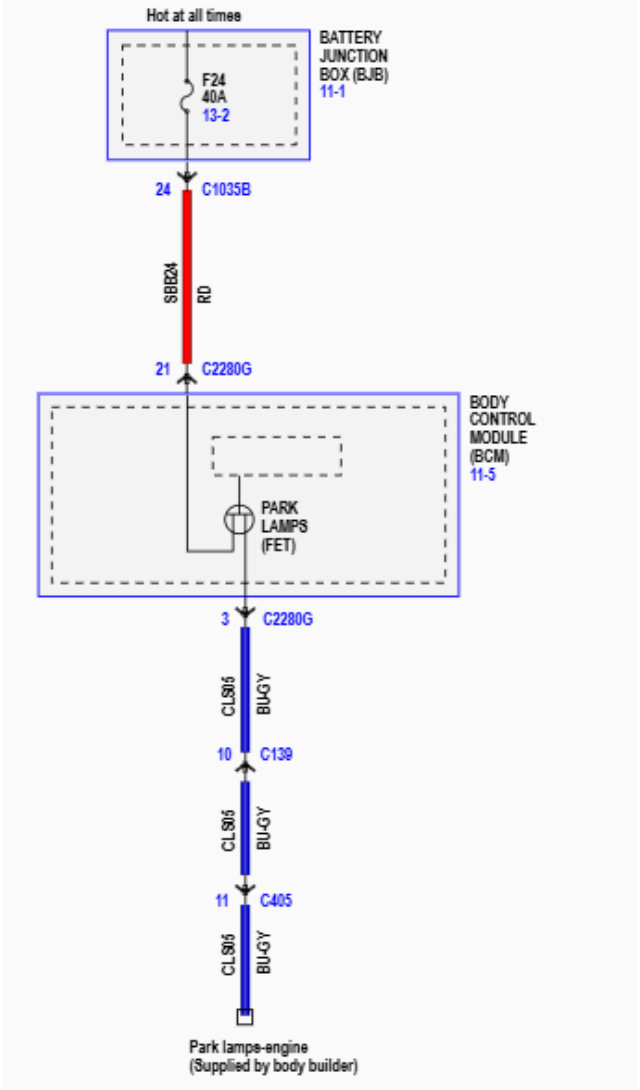
Cell 092 Page 4 Parking, Rear and License Lamps



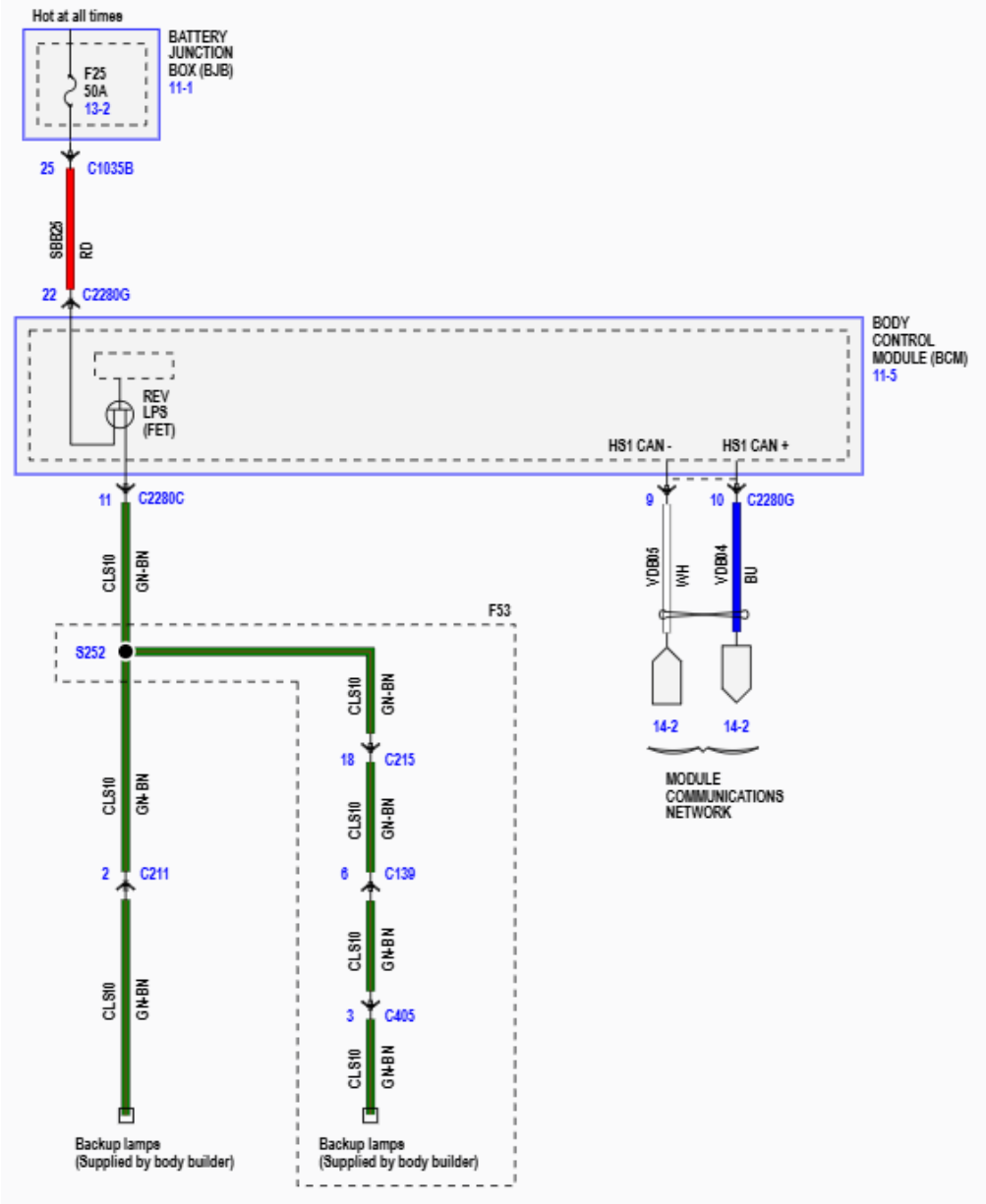
F-53 MOTORHOME / F-59 COMM. CHASSIS

PARKING, REAR AND LICENSE LAMPS & REVERSE LAMPS

Cell 092 Page 3 Parking, Rear and License Lamps



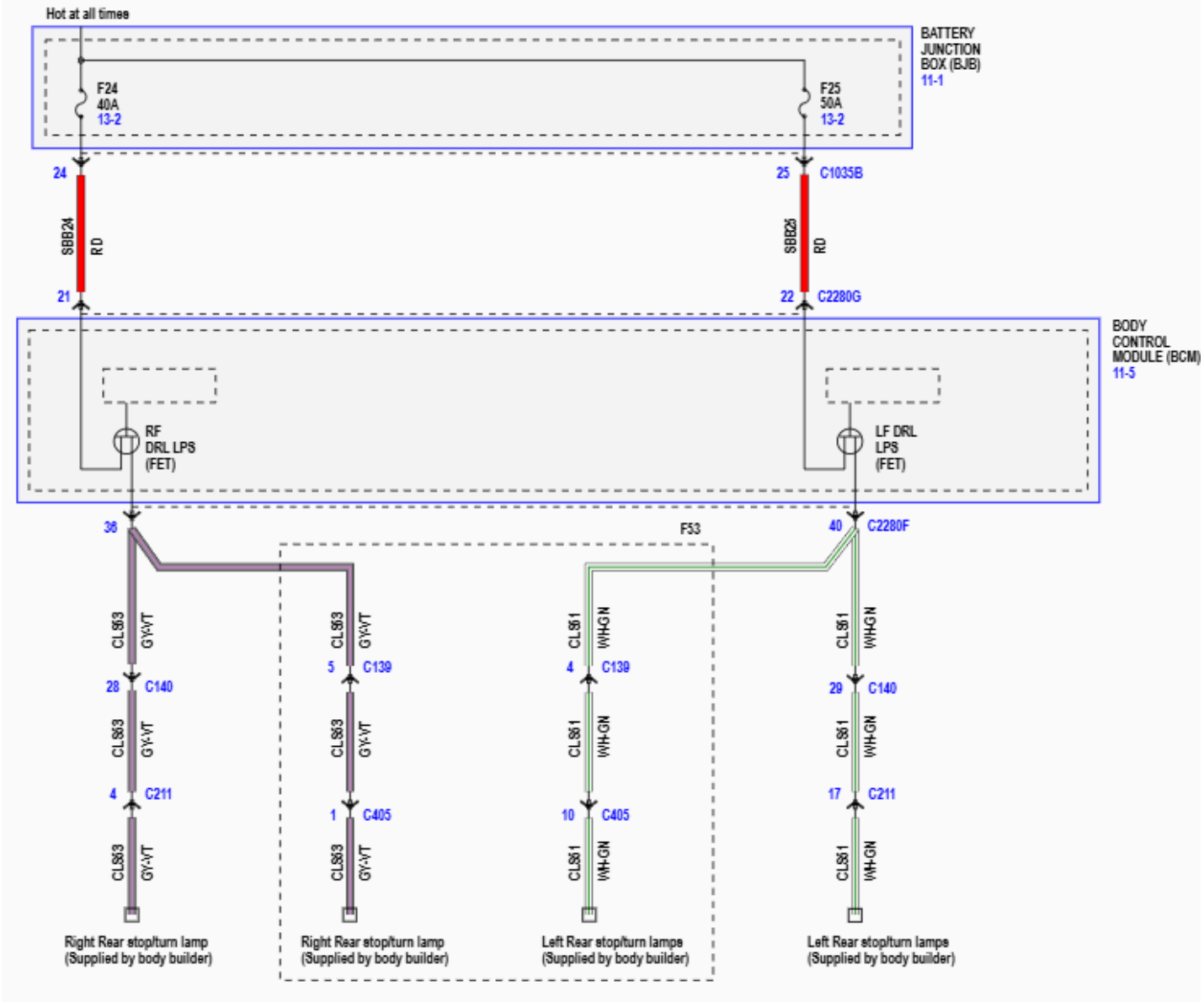
Cell 093 Page 1 Reversing Lamps



F-53 MOTORHOME / F-59 COMM. CHASSIS

DAYTIME RUNNING LAMPS

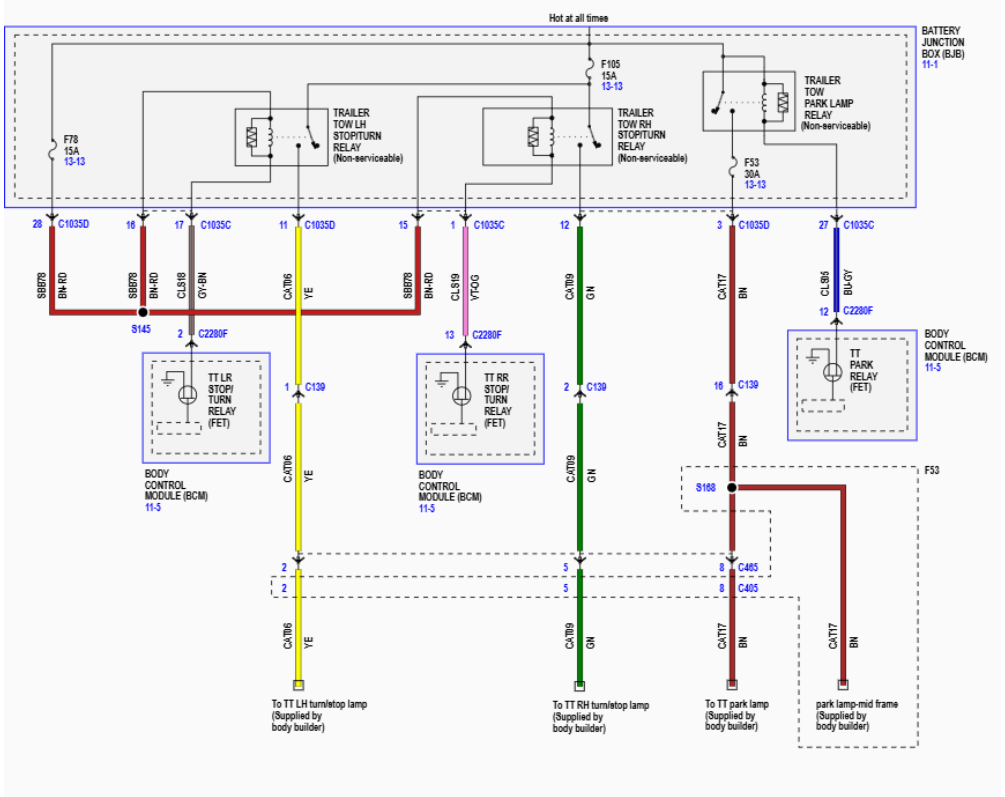
Cell 097 Page 1 Daytime Running Lamps



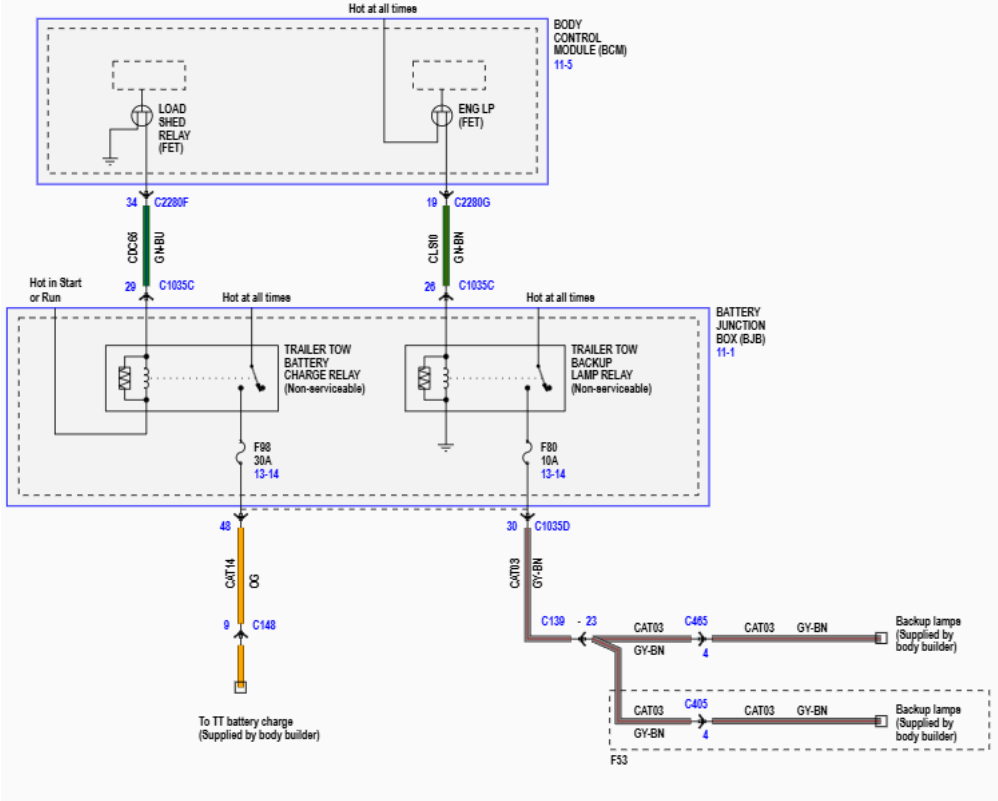
F-53 MOTORHOME / F-59 COMM. CHASSIS

TRAILER /CAMPER ADAPTER

Cell 095 Page 1 Trailer/Camper Adapter


Hot at all times
BATTERY JUNCTION BOX (BJB) 11-1
F105 15A 13-13
F78 15A 13-13
F53 30A 13-13
TRAILER TOW LH STOP/TURN RELAY (Non-serviceable)
TRAILER TOW RH STOP/TURN RELAY (Non-serviceable)
TRAILER TOW PARK LAMP RELAY (Non-serviceable)
TT LR STOP/ TURN RELAY (FET)
TT RR STOP/ TURN RELAY (FET)
TT PARK RELAY (FET)
BODY CONTROL MODULE (BCM) 11-5
S145
S168
C1035D
C1035C
C2280F
C139
C405
C465
F53
To TT LH turn/stop lamp (Supplied by body builder)
To TT RH turn/stop lamp (Supplied by body builder)
To TT park lamp (Supplied by body builder)
park lamp-mid frame (Supplied by body builder)

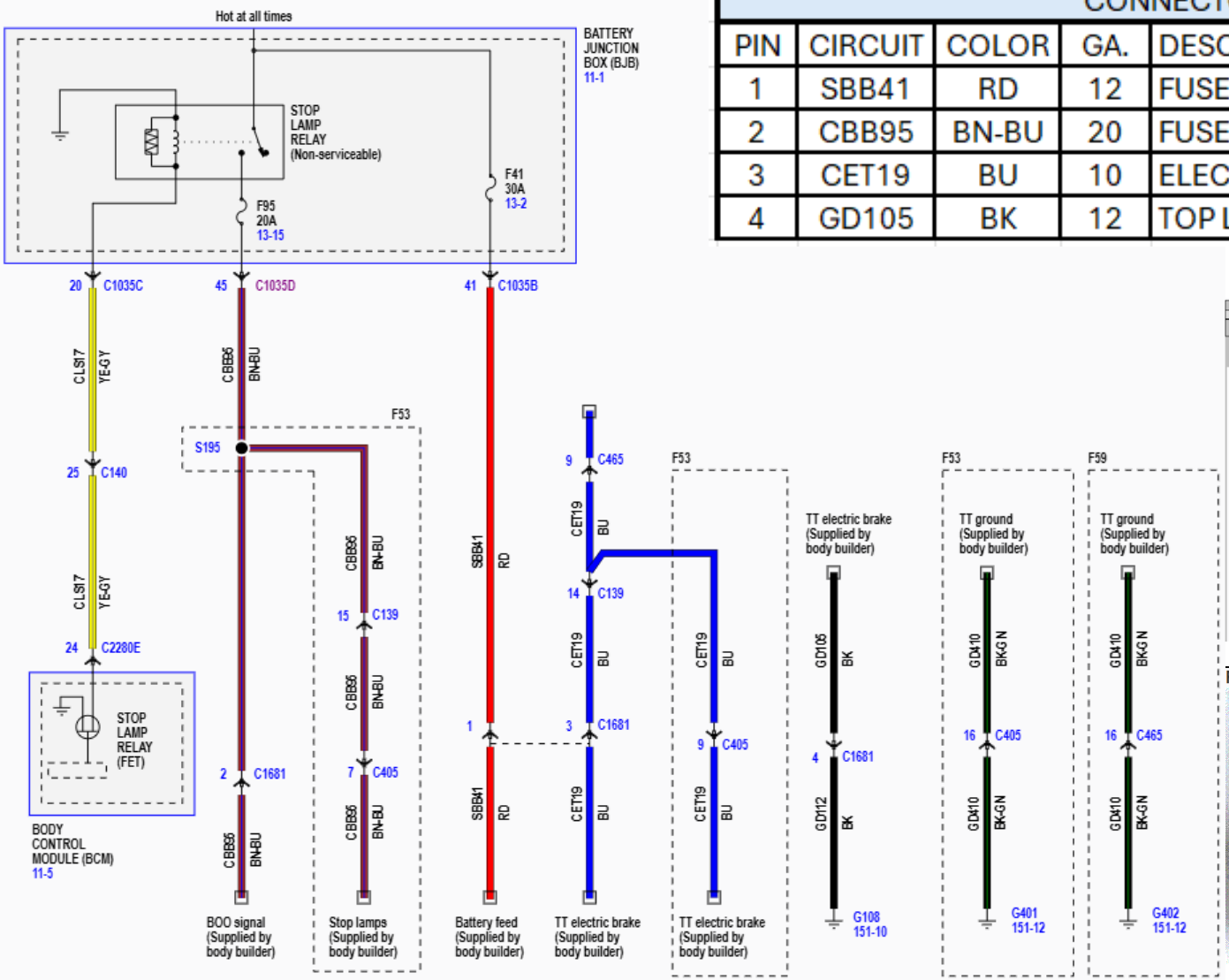
Cell 095 Page 2 Trailer/Camper Adapter



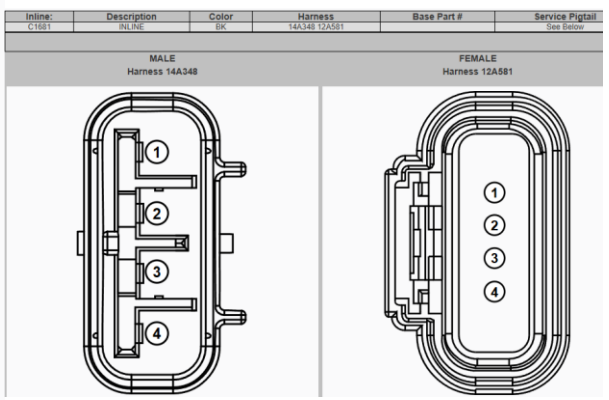
F-53 MOTORHOME / F-59 COMM. CHASSIS

TRAILER/CAMPER ADAPTER

Cell 095 Page 3 Trailer/Camper Adapter



CONNECTOR C1681				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	SBB41	RD	12	FUSE #41
2	CBB95	BN-BU	20	FUSE #95 STOP LAMP RELAY OUTPUT
3	CET19	BU	10	ELECTRIC TRAILER BRAKE
4	GD105	BK	12	TOP LEFT COWL GROUND



Pigtail Kit Part Number: WPT-1591

Pigtail Kit Part Number: WPT-1647

F-53 MOTORHOME / F-59 COMM. CHASSIS

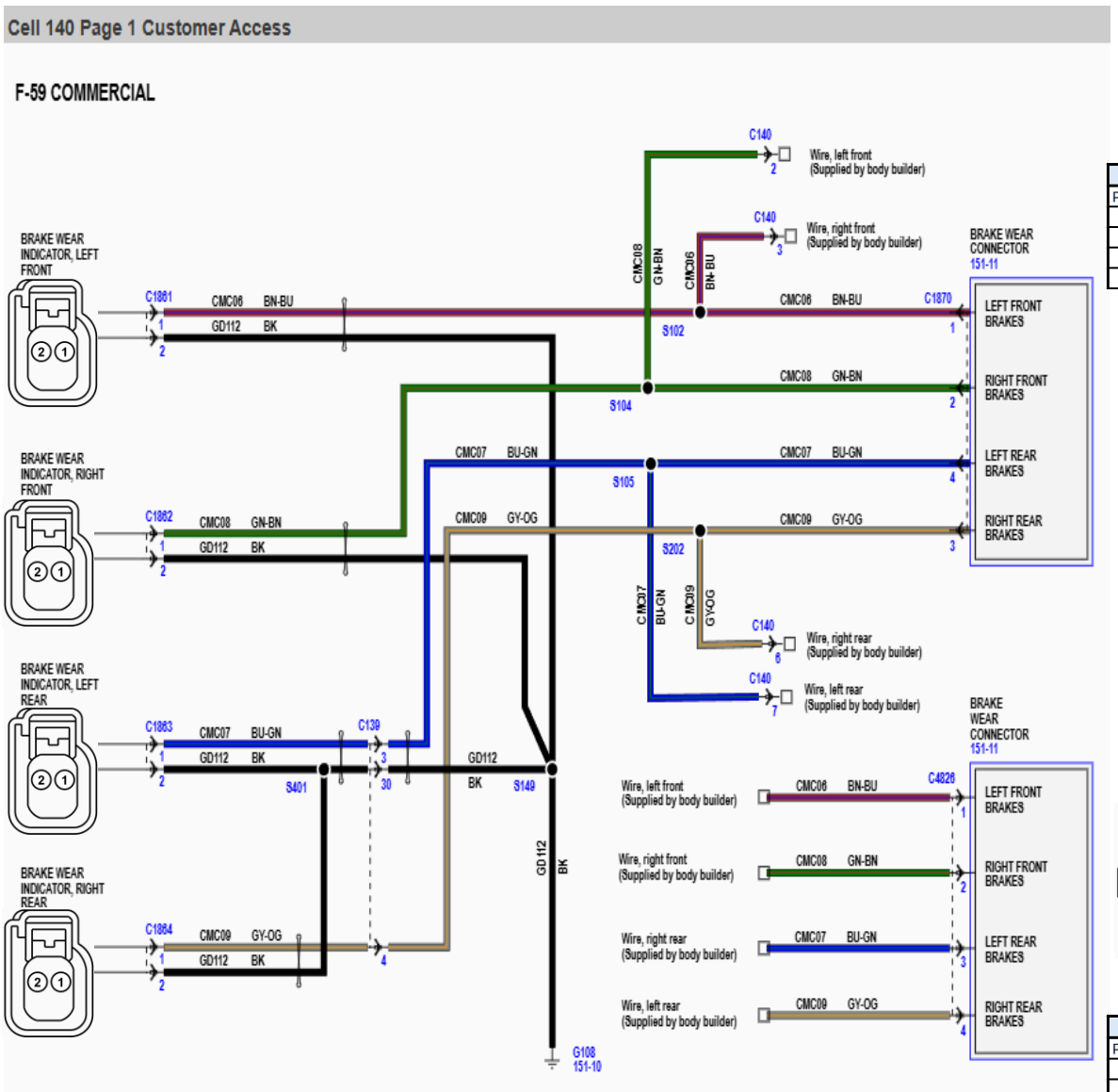
BRAKE WEAR CONNECTOR

CONNECTOR C1861				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CMC06	BN-BU	18	L. FRONT BRAKE PAD SENSOR
2	GD112	BK	18	TOP LEFT COWL GROUND

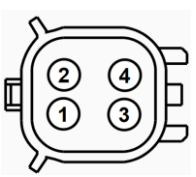
CONNECTOR C1862				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CMC08	GN-BN	18	R. FRONT BRAKE PAD SENSOR
2	GD112	BK	18	TOP LEFT COWL GROUND

CONNECTOR C1863				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CMC07	BU-GN	18	L. REAR BRAKE PAD SENSOR
2	GD112	BK	18	TOP LEFT COWL GROUND

CONNECTOR C1864				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CMC09	GY-OG	18	R. REAR BRAKE PAD SENSOR
2	GD112	BK	18	TOP LEFT COWL GROUND



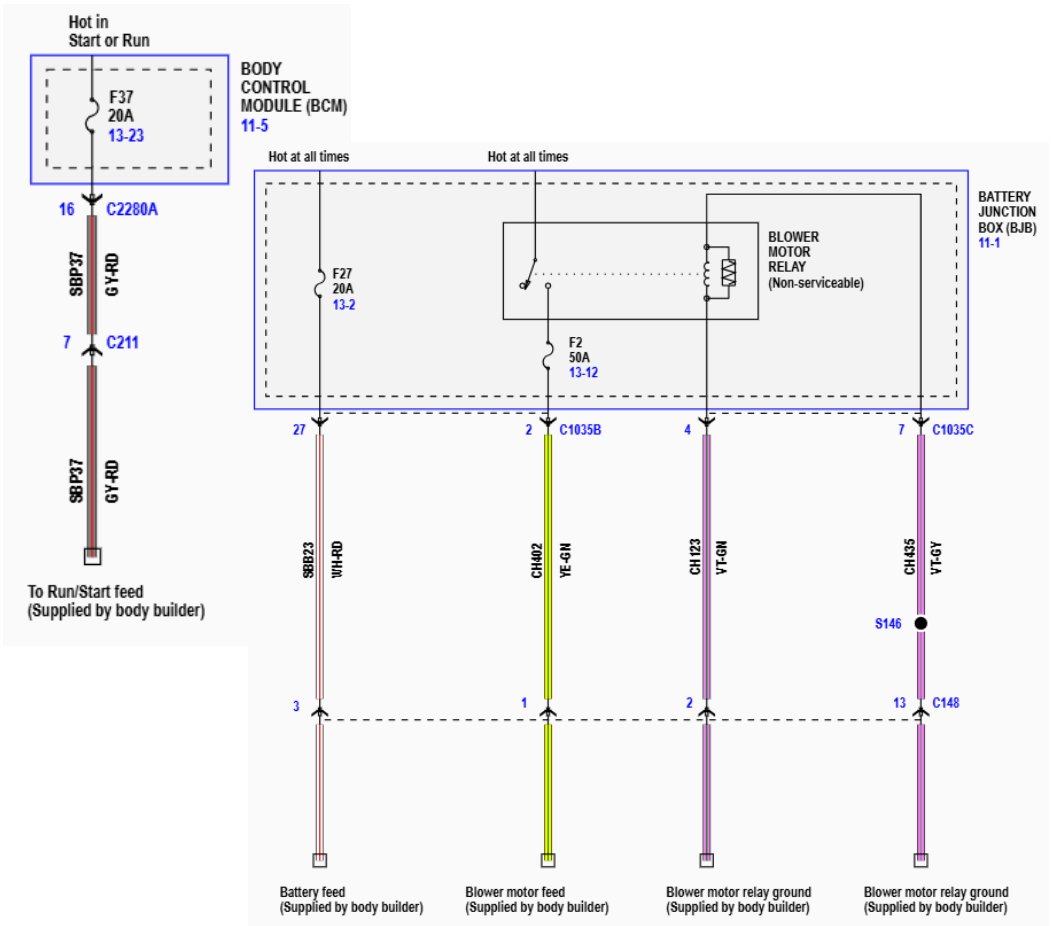
CONNECTOR C1870				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CMC06	BN-BU	18	L. FRONT BRAKE PAD SENSOR
2	CMC08	GN-BN	18	R. FRONT BRAKE PAD SENSOR
3	CMC09	GY-OG	18	R. REAR BRAKE PAD SENSOR
4	CMC07	BU-GN	18	L. REAR BRAKE PAD SENSOR



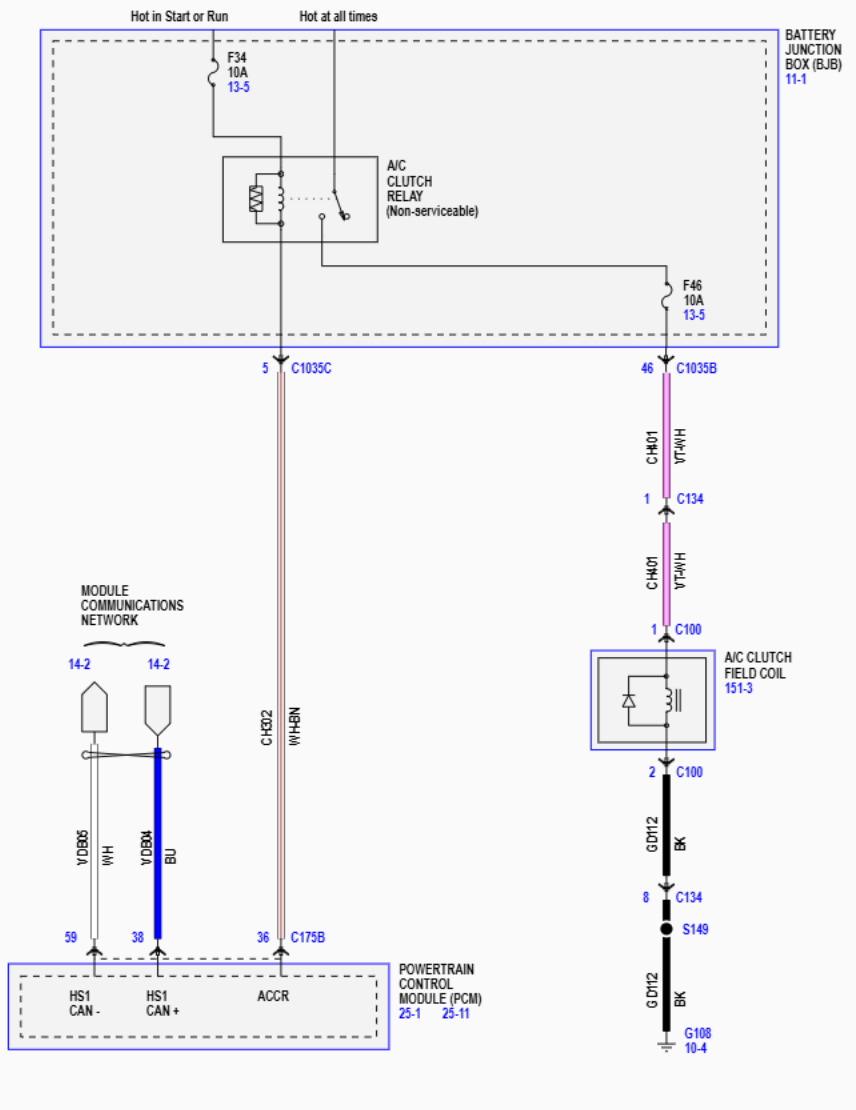
CONNECTOR C4826				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CMC06	BN-BU	18	L. FRONT BRAKE PAD SENSOR
2	CMC08	GN-BN	18	R. FRONT BRAKE PAD SENSOR
3	CMC09	GY-OG	18	R. REAR BRAKE PAD SENSOR
4	CMC07	BU-GN	18	L. REAR BRAKE PAD SENSOR

F-53 MOTORHOME / F-59 COMM. CHASSIS
CLIMATE CONTROL

Cell 054 Page 1 Manual Climate Control System

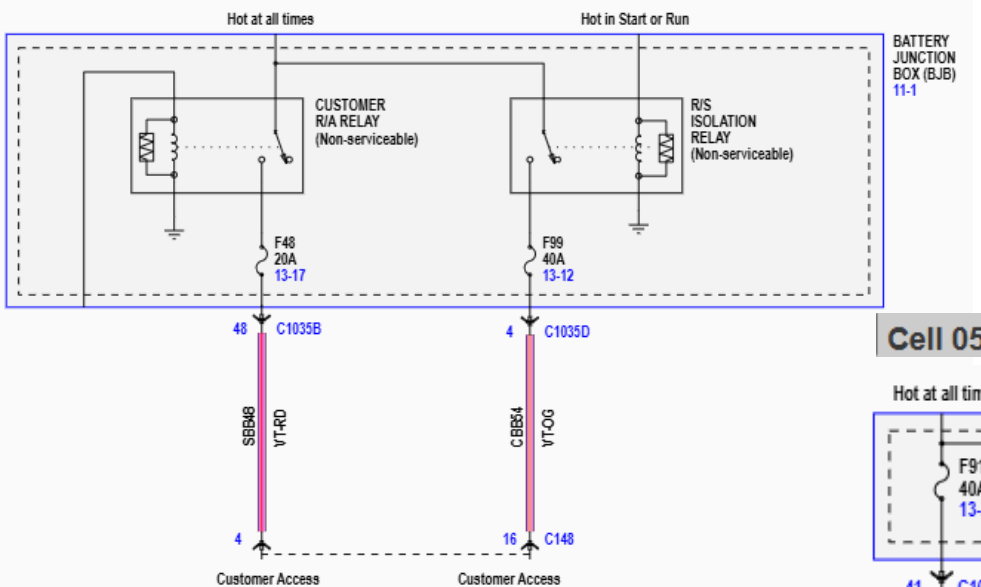


Cell 054 Page 2 Manual Climate Control System

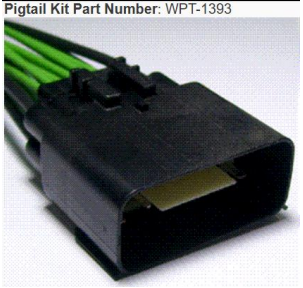


F-53 MOTORHOME / F-59 COMM. CHASSIS
CLIMATE CONTROL

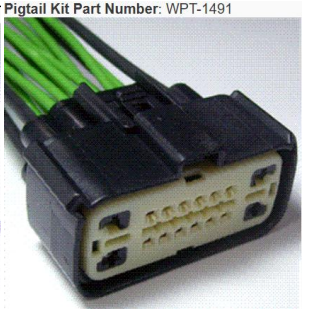
Cell 054 Page 3 Manual Climate Control System

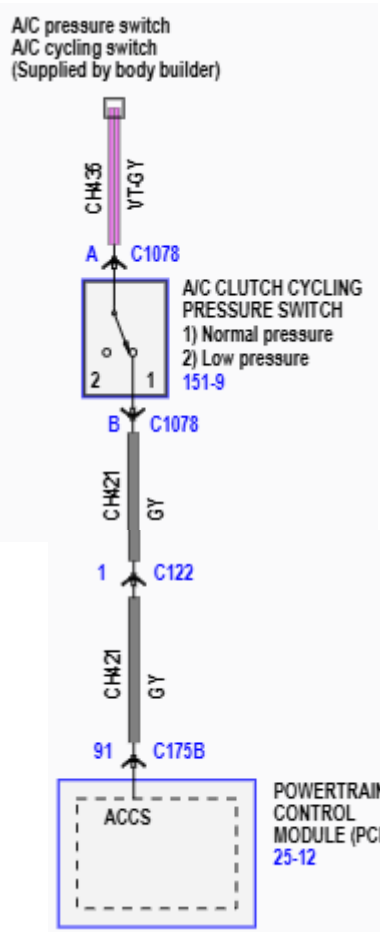


Pigtail Kit Part Number: WPT-1393

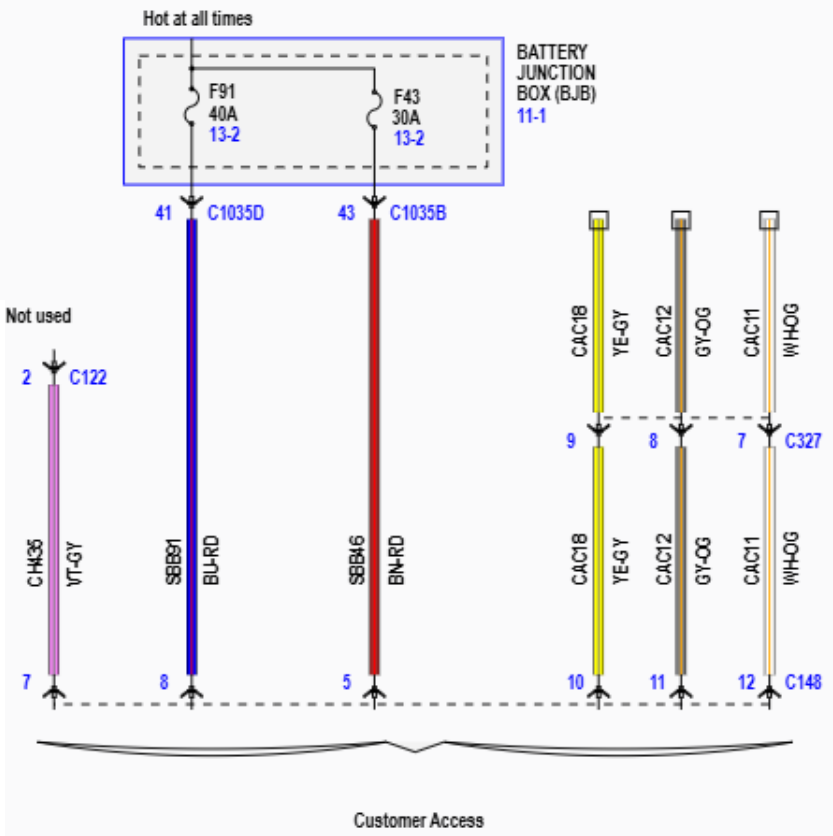


Pigtail Kit Part Number: WPT-1491

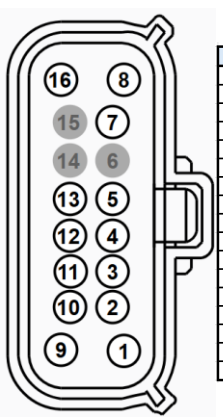




Cell 054 Page 4 Manual Climate Control System



Inline:	Description	Color	Harness
C148	INLINE	BK	19949 12A581

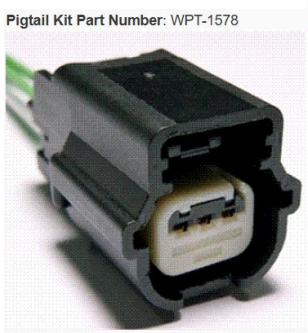


CONNECTOR C148				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	CH402	YE-GN	10	FRONT BLOWER RELAY OUTPUT
2	CH123	VT-GN	20	BLOWER MOTOR RELAY CONTROL (HSD)
3	SBB23	WH-RD	16	FUSE #27 (20A)
4	SBB48	VT-RD	16	FUSE #48 (20A)
5	SBB46	BN-RD	14	FUSE #43 (30A)
6	*	*		*
7	CH435	VT-GY	20	CLIMATE SWITCH BLOWER
8	SBB91	BU-RD	12	FUSE #91 (40A)
9	CAT14	OG	10	TRAILER CHARGE
10	CAC18	YE-GY	20	CUSTOMER ACCESS CIRCUIT # 6
11	CAC12	GY-OG	16	CUSTOMER ACCESS CIRCUIT # 4
12	CAC11	WT-OG	16	CUSTOMER ACCESS CIRCUIT # 3
13	CH435	VT-GY	20	BLOWER MOTOR RELAY CONTROL (LSD)
14	*	*	*	*
15	*	*	*	*
16	CBB54	VT-OG	12	FUSE #99 (40A)

F-53 MOTORHOME / F-59 COMM. CHASSIS

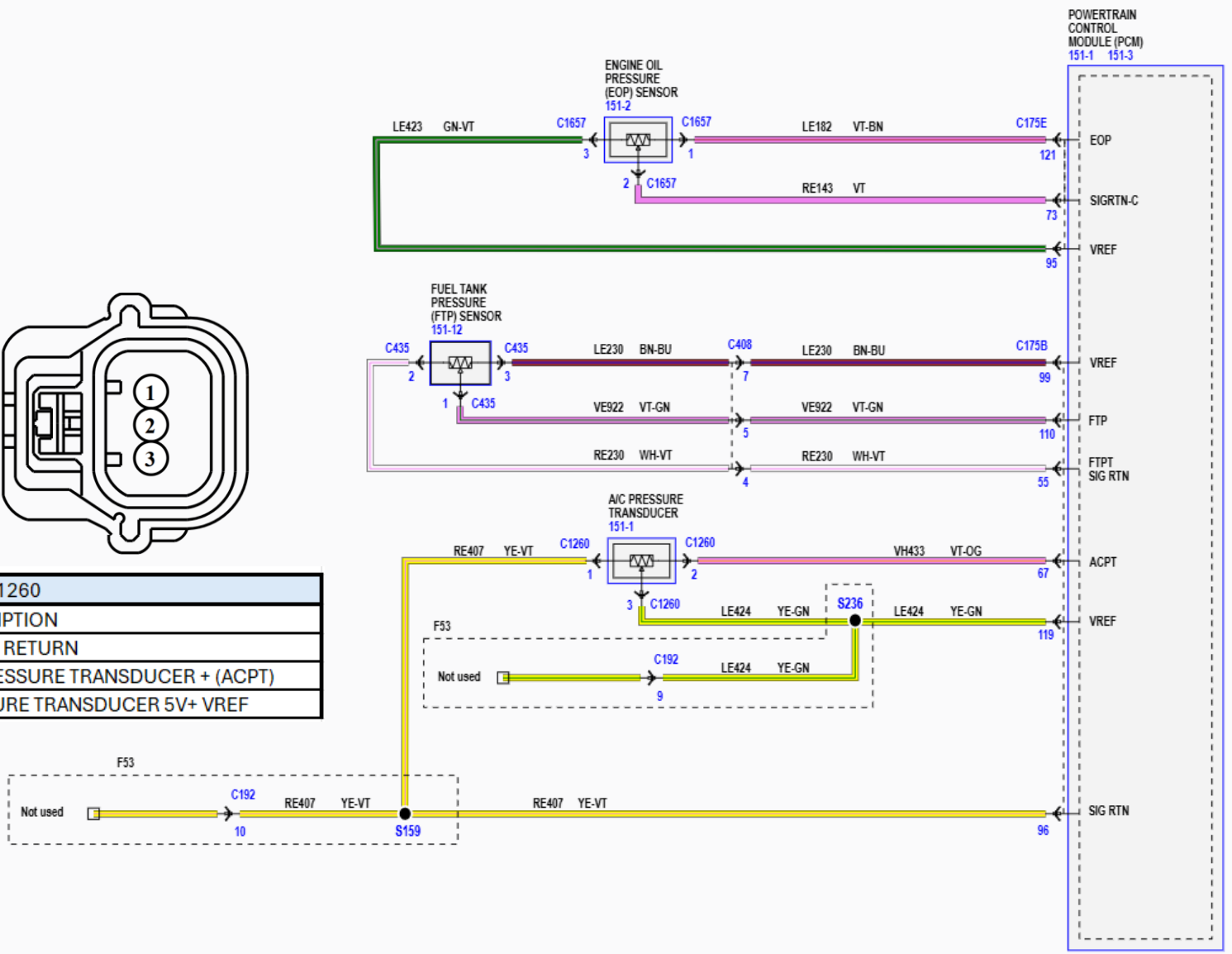
A/C PRESSURE TRANSDUCER

Cell 025 Page 7 Electronic Engine Controls - 7.3L



Pigtail Kit Part Number: WPT-1578

CONNECTOR C1260				
PIN	CIRCUIT	COLOR	GA.	DESCRIPTION
1	RE407	YE-VT	20	SIGNAL RETURN
2	VH433	VT-OG	18	A/C PRESSURE TRANSDUCER + (ACPT)
3	LH433	YE-GN	20	PRESSURE TRANSDUCER 5V+ VREF



F-53 MOTORHOME / F-59 COMM. CHASSIS

CLIMATE CONTROL: GREEN HOUSE GAS EVAPORTIVE EMISSIONS

GREEN HOUSE GAS (GHG) EVAPORATIVE EMMISSIONS

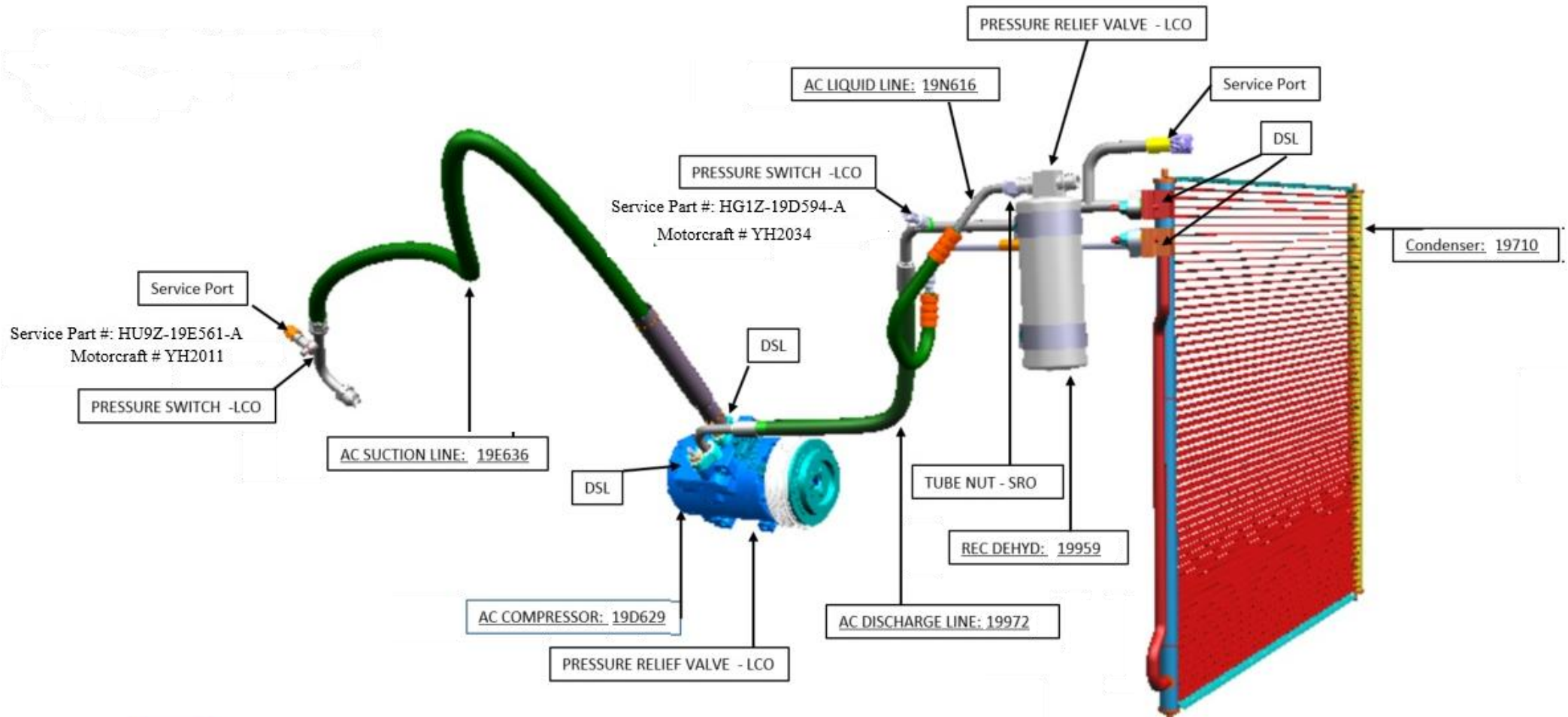
Pursuant to California regulation 17 CCR §95663 and EPA 40CFR 1037.115(e), the specific leakage for this vehicle (as built by Ford Motor Company) is shown in the table below (see "J2727 Leakage Value" column). The Ford A/C Prep Package on the stripped chassis vehicle, if equipped, is an incomplete air conditioning system which must be completed to meet the leakage requirements as outlined in the Delegated Assembly Agreement. The intermediate or final-stage manufacturer must calculate the final system leakage. The spreadsheet used by Ford to calculate the J2727 Leakage is available and can be updated to reflect the modified system. In order to maintain vehicle compliance with a completed Ford air conditioning system, Ford will provide the final stage manufacturer's SAE J2727 leakage information and air conditioning schematics to California Air Resources Board (CARB) and EPA.

Please contact Ford BBAS to request a copy of the vehicle line specific GHG Evaporative Emissions Worksheet: https://www.fordpro.com/en-us/upfit/contact-us/

MY	VEHICLE LINE	FEATURES /MODELS	EVAPORATOR	POWERTRAIN	REFRIGERANT	CHARGE SIZE OF A/C SYSTEM (kg)	J2727 LEAKAGE VALUE (g/yr)	MAX ALLOWED LEAKAGE[3]
2026	F5x	With Suction Line	N/A	7.3 L V8 Gas	R-134a	0	10.134	11
2026	F5x	Without Suction Line	N/A	7.3 L V8 Gas	R-134a	0	8.925	11
*NO CHARGE IS ADDED WHILE SHIPPING OUT THE VEHICLE AS IT GOES TO THE CUSTOMER AS AN INCOMPLETE SYSTEM.								

F-53 MOTORHOME / F-59 COMM. CHASSIS

F5X WITH SUCTION LINE



HOSE

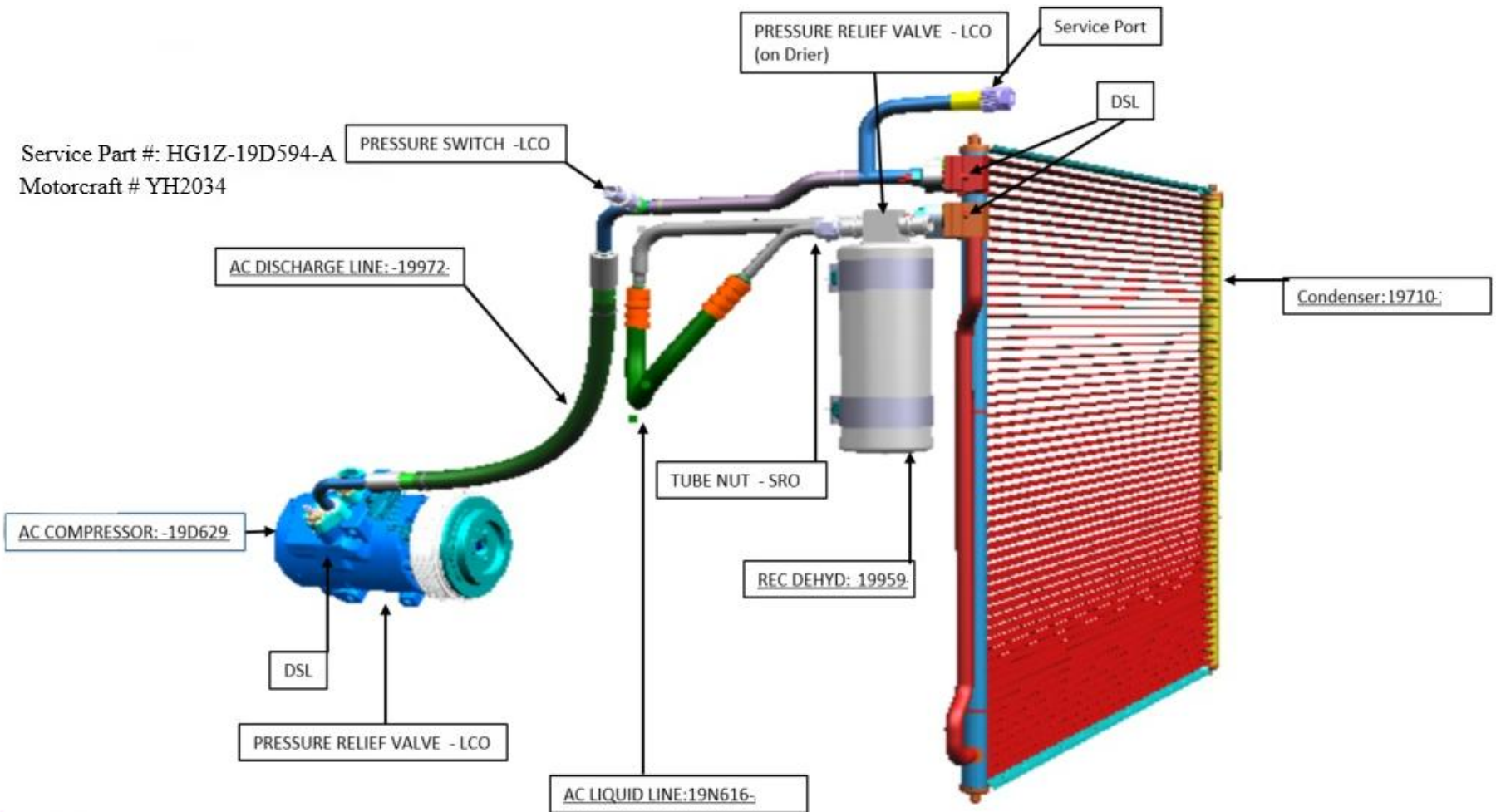
ALUMINUM TUBE

Ford Abbreviation	Ford Terminology	SAE Terminology
DSL	Dual Slim Line	Seal Washer with O-ring
SSL	Single Slim Line	Seal Washer
MSF	Metal Seal Fitting	Metal Gasket
SRO	-	Single Radial O-ring

Ford Abbreviation	Ford Terminology	SAE Terminology
SCO / SAO / MdS	-	Single Captured O-ring / Single Axial O-ring / Molded Seal
MO	Multi O-Ring	Multiple O-ring
LCO	Leak Cheched O-Ring	Helium Leak Checked Joint

F-53 MOTORHOME / F-59 COMM. CHASSIS

F5X WITHOUT SUCTION LINE



HOSE

ALUMINUM TUBE

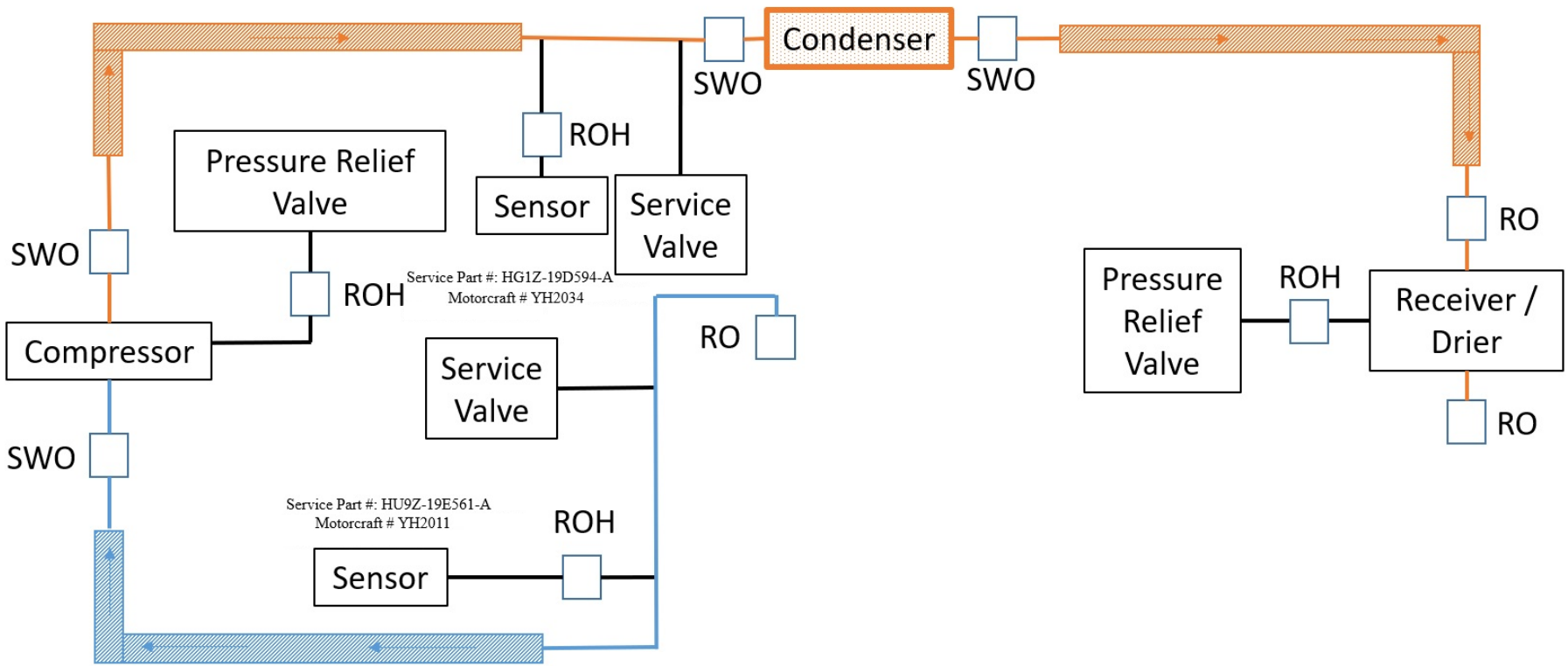
Ford Abbreviation	Ford Terminology	SAE Terminology
DSL	Dual Slim Line	Seal Washer with O-ring
SSL	Single Slim Line	Seal Washer
MSF	Metal Seal Fitting	Metal Gasket
SRO	-	Single Radial O-ring

Ford Abbreviation	Ford Terminology	SAE Terminology
SCO / SAO / MdS	-	Single Captured O-ring / Single Axial O-ring / Molded Seal
MO	Multi O-Ring	Multiple O-ring
LCO	Leak Cheched O-Ring	Helium Leak Checked Joint

PLEASE WORK WITH YOUR LOCAL FORD PARTS DEALER TO OBTAIN THE LATEST REVISION LEVEL PART NUMBERS

F-53 MOTORHOME / F-59 COMM. CHASSIS

F5X HVAC SCHEMATIC



Platform: Ford F5x Stripped Chassis
Customers:

Date Revised: 04/09/21

- RO: single Radial O-ring
- ROH: single Radial O-ring (Helium leak checked)
- SW: Seal Washer
- SWO: Seal Washer with O-ring

metal pipeline

flexible hose

F-53 MOTORHOME / F-59 COMM. CHASSIS

F-59 COMMERCIAL CHASSIS: SECONDARY AUDIBLE SPEAKER EQUIPPED WITH ADAS & RADIO DELETE

SECONDARY AUDIBLE SPEAKER EQUIPPED WITH ADAS AND RADIO DELETE
F59 Stripped Chassis Equipped With Collision Mitigation And Lane Departure Warning

The recommended zones of where to mount the secondary audible speaker in relation to the vehicle cab space and driver.

Upfitter/Modifier has the option of mounting the secondary audible speaker (provided in the dunnage box) in an area close to driver so that the audible chime can be heard by the driver.

The intent is to mount the speaker exposed and not underneath the dash panel or other components that would inhibit sound from the speaker.

Recommended locations for speaker mounting zones:

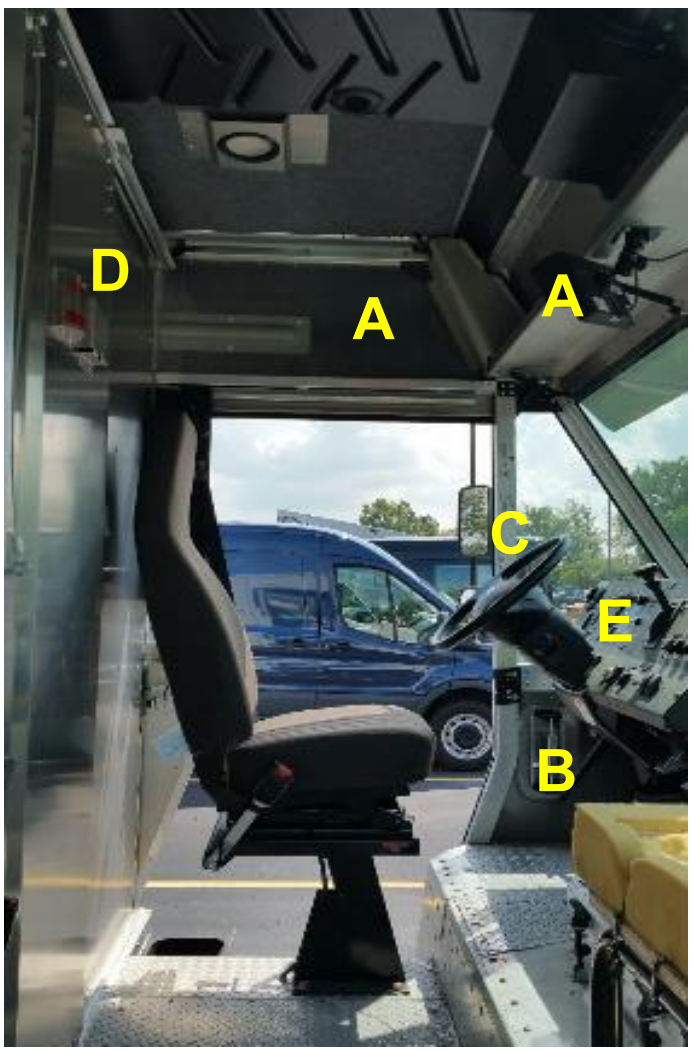
A - Above Driver Door Centerline

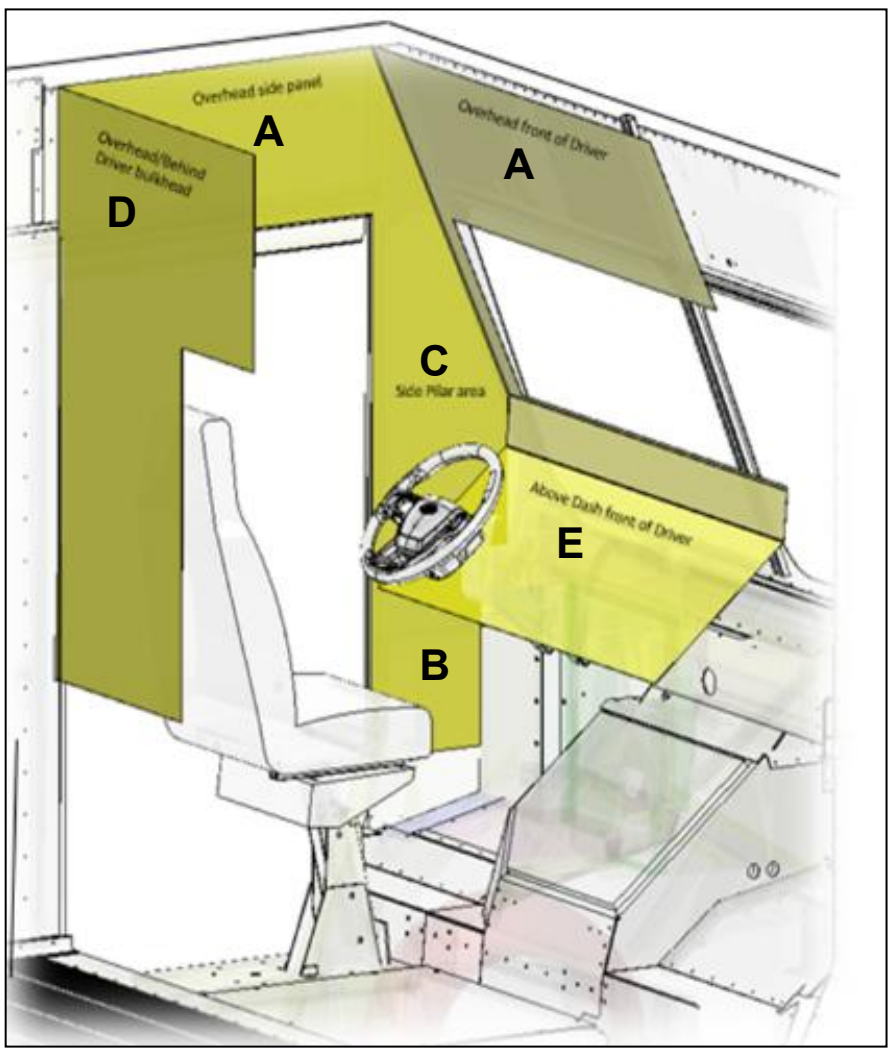
B – Lower A-Pillar by Fuse Box

C – Left Upper A-Pillar

D – Behind Driver Above Cargo Door

E – Front Center at Reverse Park Display





F-53 MOTORHOME / F-59 COMM. CHASSIS

SENSORS: SUNLOAD PACKAGE FOR AUTOLAMP USE ONLY (FOR STRIPPED CHASSIS APPLICATION)

SUNLOAD PACKAGE FOR AUTOLAMP USE ONLY (FOR STRIPPED CHASSIS APPLICATION)

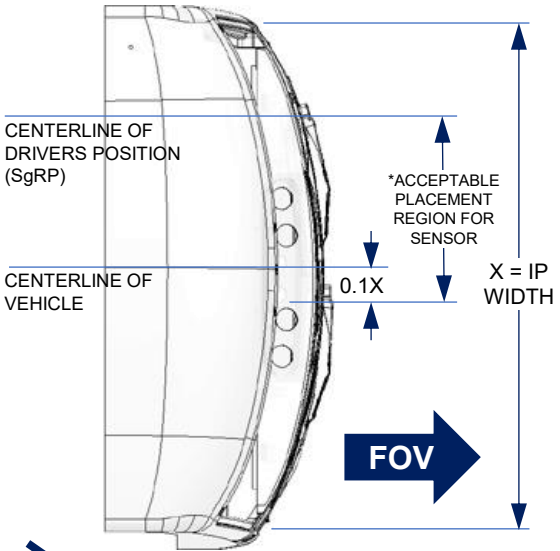
Purpose: Verify the light sensor is correctly connected and the analog signal is being received by the BCM for processing.

1. Set Ignition "On".
2. Determine ambient lighting condition by observing the cluster.
   - A. In dim lighting conditions the cluster backlighting will be in night mode (dimmed).
   - B. In bright lighting conditions the cluster backlighting will be in daytime mode (bright).
3. Check for sensor connection and that the analog voltage signal is being sent from the sensor to the BCM by toggling the cluster dimming (delay timing is set in the cluster and will be off, 10 sec, 20 sec, or 120 sec).
   - A. If the cluster is in night mode, shine a bright flashlight directly onto the sensor surface for 10-20 seconds and observe the cluster. The lighting should change from dim to bright and the headlamps should go off.
   - B. If the cluster is in daytime mode, cover the sensor surface completely for 10-20 seconds and observe the cluster. The lighting should change from bright to dim and the headlamps should go on.

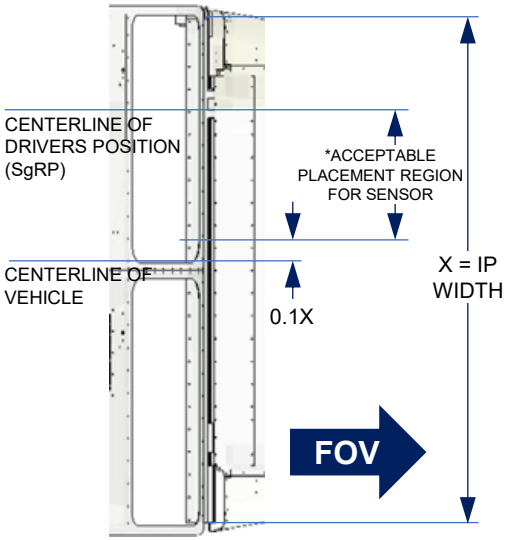
'*' Any windshield logos, frits, or other opaque components such that they do not block the sunload sensor from exposure in this region.

For the purposes of this requirement, the term "opaque" will include all materials which are less than 90% transmissible to light in frequency range from 380nm to 1400nm (visible light through the near infra-red spectrum).

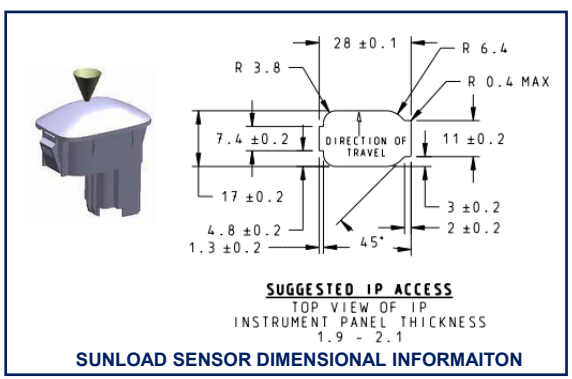
All Sensor positions must be validated per Builder procedure.



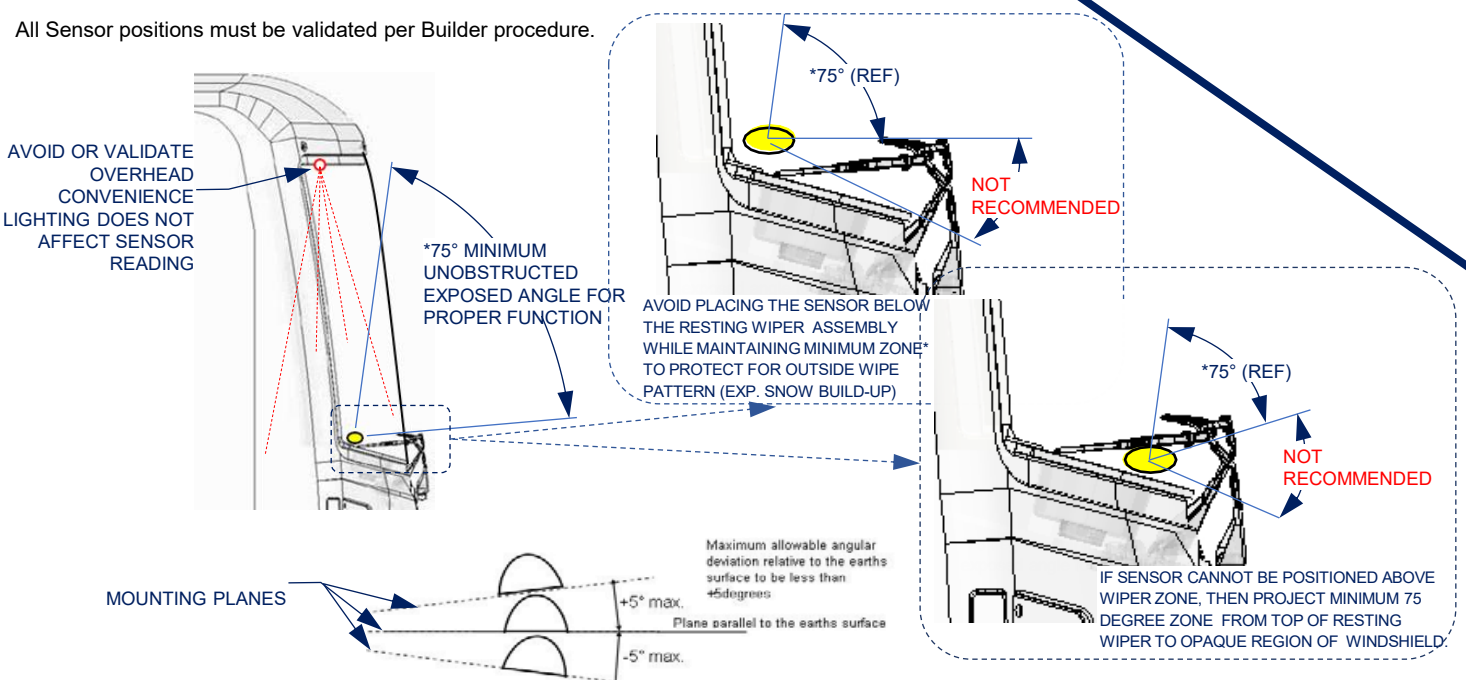
F-53 PLAN VIEW



F-59 PLAN VIEW



SUNLOAD SENSOR DIMENSIONAL INFORMAITON

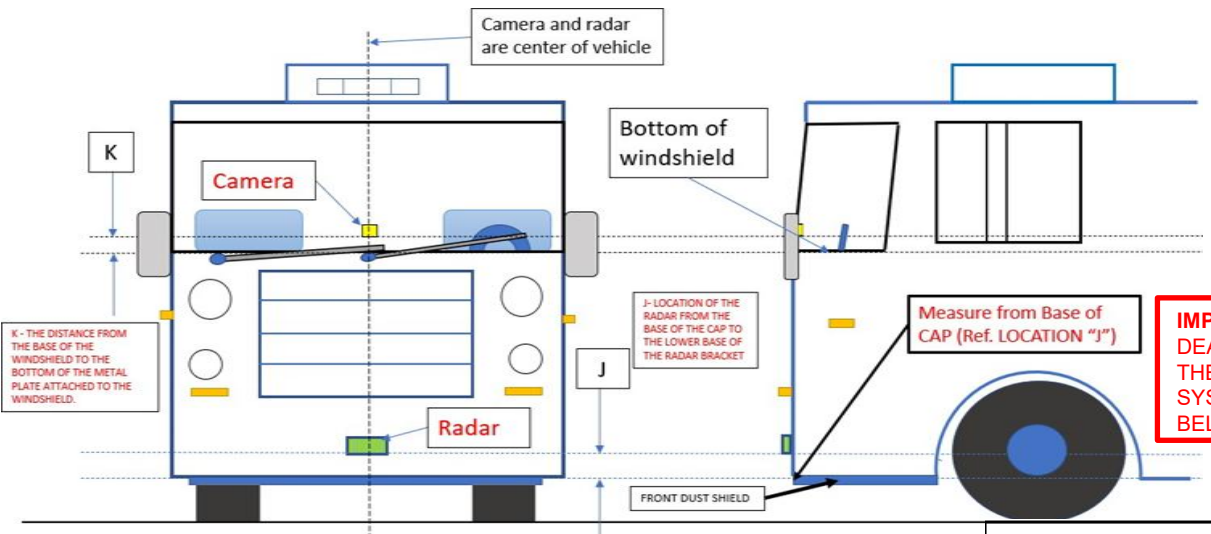

AVOID OR VALIDATE OVERHEAD CONVENIENCE LIGHTING DOES NOT AFFECT SENSOR READING
*75° MINIMUM UNOBSTRUCTED EXPOSED ANGLE FOR PROPER FUNCTION
*75° (REF)
NOT RECOMMENDED
AVOID PLACING THE SENSOR BELOW THE RESTING WIPER ASSEMBLY WHILE MAINTAINING MINIMUM ZONE* TO PROTECT FOR OUTSIDE WIPE PATTERN (EXP. SNOW BUILD-UP)
*75° (REF)
NOT RECOMMENDED
IF SENSOR CANNOT BE POSITIONED ABOVE WIPER ZONE, THEN PROJECT MINIMUM 75 DEGREE ZONE FROM TOP OF RESTING WIPER TO OPAQUE REGION OF WINDSHIELD
MOUNTING PLANES
Maximum allowable angular deviation relative to the earths surface to be less than ±5degrees
+5° max.
Plane parallel to the earths surface
-5° max.

F-53 MOTORHOME / F-59 COMM. CHASSIS

F-53 MOTORHOME: FORD CO-PILOT360™ TECHNOLOGY

Ford Co-Pilot360™

Ford Co-Pilot360 Technology is a collection of advanced driver-assist features designed to help drivers feel confident and in command on the road. These smart features can help drivers be more aware of their surroundings, provide alerts about surprises on the road and help to avoid potential collisions while navigating the road ahead. This brand represents the growing collection of Ford driver-assist features, available in branded packages or individually, on select vehicles across the Ford lineup.


Camera and radar are center of vehicle
K
Camera
Bottom of windshield
K - THE DISTANCE FROM THE BASE OF THE WINDSHIELD TO THE BOTTOM OF THE METAL PLATE ATTACHED TO THE WINDSHIELD.
J- LOCATION OF THE RADAR FROM THE BASE OF THE CAP TO THE LOWER BASE OF THE RADAR BRACKET
J
Measure from Base of CAP (Ref. LOCATION "J")
Radar
FRONT DUST SHIELD

IMPORTANT NOTE!
DEALER MUST SELECT THE CORRECT FUSION PACK WHEN ORDERING 55C. THE FUSION PACK (LISTED BELOW) MUST BE CORRECTLY SELECTED FOR THE DAT SYSTEM TO FUNCTION PROPERLY. THIS IS BASED ON BRAND AND MODEL LISTED BELOW. THE SELECTED FUSION PACK HARDWARE WILL BE INCLUDED IN DUNNAGE.

REFERENCE ONLY- SPECIFIC LOCATION BASED ON CUSTOMER APPROVED CAD. DOCUMENT TO BE USED WITH F53 VEHICLES THAT HAS APPROVED USAGE FOR THE COLLISON MITIGATION SYSTEM. DO NOT USE DOCUMENT TO PLACE CAMERA AND RADAR ON VEHICLES THAT WERE NOT BUILT WITH COLLSION MITIGATION OPTION. ADDITIONAL INSTALLATION/APPROVED USAGE GUIDANCE CAN BE REQUESTED AT https://www.fordpro.com/en-us/upfit/contact-us/

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Static Alignment on F53 with CADS 3.5 (only)

The Camera will need to be tilted to **Down 7.3 Degrees** using an inclinometer

Step1: zero inclinometer to ground
Step 2: loosen screw that holds camera allowing for camera to be tilted. Place inclinometer on top of camera box and tilt camera **Down 7.3 degrees**
Step 3: Tighten bolt of camera to bracket while maintaining tilt angle of camera

WHEELBASE	Order Code GVWR PACKAGE	SC F5D 696A 18K 20E	SC F5D 696A 22K 20S	SC F5D 696A 24K 20T	SC F5D 696A 26K 20U
Stripped Chassis	178"	S	–	–	–
Stripped Chassis	190"	S	–	–	–
Stripped Chassis	208"	S	O	–	–
Stripped Chassis	228"	–	S	–	O
Stripped Chassis	242"	–	S	–	O
Stripped Chassis	252"	–	–	S	O
Driver Assist Technology Package • Includes the following features: – Automatic Emergency Braking – Distance Alert/Distance Indication – Adaptive Cruise Control – Lane Departure Warning – Driver Alert System and Message Center – Auto High Beam Control Requires Electronic Stability Control	55C	O	O	O	O
DEALER: IMPORTANT NOTE! DEALER MUST SELECT THE CORRECT FUSION PACK WHEN ORDERING 55C. The Fusion Pack (listed below) MUST BE CORRECTLY SELECTED for the DAT system to function properly. THIS IS BASED ON BRAND AND MODEL LISTED BELOW. The selected FUSION PACK hardware will be included in dunage.					
Camera / Radar Fusion Pack 4 for: **FLEETWOOD – ADMIRAL** (60.06 degree Windshield and 471.70mm Radar Location from Ground) Not available on 178" or 208" wheelbases on 18,000 Lb. GVWR; not available on 242" wheelbase on 22,000 Lb. GVWR	870	O	O	–	–
Camera / Radar Fusion Pack 5 for: **FLEETWOOD – BOUNDER/ SOUTHWIND / VACATIONER** (82.97 degree Windshield and 589.66mm Radar Location from Ground) Not available on 18,000, Lb GVWR model; Not available on 242" wheelbase on 22,000 Lb. GVWR; Not available on 252" wheelbase on 24,000 Lb. GVWR; Not available on 228" wheelbase on 26,000 Lb. GVWR.	871	–	O	O	O
Camera / Radar Fusion Pack 6 for: **FLEETWOOD – FLAIR** (81.40 degree Windshield and 396.67mm Radar Location from Ground) Not available on 208" wheelbase on 22,000Lb. GVWR; not available on 242" wheelbase on 22,000 Lb. or 26,000 Lb. GVWRs; not available on 228" wheelbase on 26,000 Lb. GVWR	872	O	O	–	–
Camera / Radar Fusion Pack 7 for: **FLEETWOOD – FORTIS/INVICTA** (83.12 degree Windshield and 589.66mm Radar Location from Ground) Not available on 178"or 208" wheelbases on 18,000 Lb. GVWR; Not available on 242" wheelbase on 26,000 lb. GVWR	873	–	O	–	O
Camera / Radar Fusion Pack 8 for: **NEWMAR CONFIG 1** (78.10 degree Windshield and 594.16mm Radar Location from Ground) Not available on 228" wheelbase on 26,000 Lb. GVWR; not available on 242" wheelbase on 22,000 Lb. GVWR; not available on 252" wheelbase on 24,000 GVWR	874	–	O	O	O
Camera / Radar Fusion Pack 9 for: **TIFFIN ALLEGRO** (83.40 degree Windshield and 646.20mm Radar Location from Ground) Not available on 208" wheelbase on 22,000Lb. GVWR; not available on 228" wheelbase on 26,000 Lb. GVWR; not available on 242" wheelbase on 22,000 Lb. or 26,000 Lb. GVWRs	875	–	O	O	O
Camera / Radar Fusion Pack 10 for: **WINNEBAGO J-SERIES** (78.71 degree Windshield and 350.54mm Radar Location from Ground) Not available on 228" or 242" wheelbases on 22,000 Lb. GVWR; not available on 252" wheelbase on 24,000 Lb. GVWR	876	–	O	–	O
Camera / Radar Fusion Pack 11 for: **WINNEBAGO F-SERIES** (77.12 degree Windshield and 368.74mm Radar Location from Ground) Not available on 208" or 242" wheelbases on 22,000 Lb. GVWR	877	–	O	O	–
CAMERA / RADAR FUSION PACK 22 (87I) for: **WINNEBAGO E-SERIES** (80.8 degree Windshield and 571.4mm Radar Location from Ground) Not available on 228" wheelbase on 18,000 GVWR. Not available on 242" wheelbase on 22,000 Lb. GVWR	87I	O	O	–	–

F-53 MOTORHOME / F-59 COMM. CHASSIS

F-59 MOTORHOME: FORD CO-PILOT360™ TECHNOLOGY

Ford Co-Pilot360™
Ford Co-Pilot360 Technology is a collection of advanced driver-assist features designed to help drivers feel confident and in command on the road. These smart features can help drivers be more aware of their surroundings, provide alerts about surprises on the road and help to avoid potential collisions while navigating the road ahead. This brand represents the growing collection of Ford driver-assist features, available in branded packages or individually, on select vehicles across the Ford lineup.

IMPORTANT NOTE!
DEALER MUST SELECT THE CORRECT FUSION PACK WHEN ORDERING 55C.
THE FUSION PACK (LISTED BELOW) MUST BE CORRECTLY SELECTED FOR THE DAT SYSTEM TO FUNCTION PROPERLY. THIS IS BASED ON BRAND AND MODEL LISTED BELOW. THE SELECTED FUSION PACK HARDWARE WILL BE INCLUDED IN DUNNAGE.

		Order	SC		
		Code GVWR Package	F5K 696A 16K 20H	F5K 696A 19.5K 20J	F5K 696A 22K 20S
WHEELBASE	Stripped Chassis	158"	S	O	–
	Stripped Chassis	168"	–	S	–
	Stripped Chassis	178"	S	O	O
	Stripped Chassis	190"	–	S	–
	Stripped Chassis	208"	–	S	O
GROUPS/PACKAGES (see Packaged Options/Emissions Page for Pkg. Content & Restrictions) (continued)					
Driver Assist Technology Package 2 – Includes the following features (requires Electronic Stability Control): ○ Automatic Emergency Braking ○ Distance Alert/Distance Indication ○ Post Impact Braking ○ Adaptive Cruise Control – Not Available with Parcel Delivery Package (59P) or 22K GVWR upgrade package (20S) ○ Lane Departure Warning ○ Driver Alert System and Message Center ○ Auto High Beam Control ○ PRND421 Transmission Range Indicator with Level 2 IP Cluster *Requires selection of one of the following: ○ Camera / Radar Fusion Pack 1 (87T) for 60 degree windshield angle used with: **UTILIMASTER** ○ Camera / Radar Fusion Pack 2 (87U) for 64.45 degree windshield angle used with: **MORGAN OLSON with 64.45** degree windshield angle ○ Camera / Radar Fusion Pack 3 (87V) for 66.89 degree windshield angle used with: **MORGAN OLSON with 66.89** degree windshield angle NOTE: The correct Fusion Pack windshield angle bracket (listed above) must be selected for the DAT system to function properly. The selected bracket will be included with dunage.		55C	O	O	O
Driver Assist Technology Package 1 – Requires Valid FIN Code – Requires Electronic Stability Control and Driver Assist Technology Package (55C) Note: Settings cannot be changed by driver or fleet admin ○ Driver Alert – ON ○ Collision Assist – Alert Sensitivity – NORM ■ Distance Indication Set – ON ■ Active Brake – ON ■ Pre Collision Warning – ON ■ Lane Keep – ON ■ Sensitivity Set – NORM ○ Lighting ■ Auto Delay – 20 sec ■ Auto High Beam – ON ■ Day Lights – ON		21B	O	O	O

F-53 MOTORHOME / F-59 COMM. CHASSIS
CHANGE CONTROL